

# Supply Systems

313526J

EN

For use with non-heated bulk supply of medium to high viscosity sealants and adhesive materials. For professional use only.

Not for use in European explosive atmosphere locations.

## L20c 2 inch single post elevator

20 liter (5 gallon) size

100 psi (0.7 MPa, 7 bar) Maximum Air Inlet Pressure

## S20 3 inch single post

20 liter (5 gallon) size

125 psi (0.9 MPa, 9 bar) Maximum Air Inlet Pressure

## D60 3 inch dual post

60 liter (16 gallon) size, 30 liter (8 gallon),  
20 liter (5 gallon) sizes

150 psi (1.0 MPa, 10bar) Maximum Air Inlet Pressure

## D200 3 inch dual post

200 liter (55 gallon), 115 liter (30 gallon),  
60 liter (16 gallon) size, 30 liter (8 gallon),  
20 liter (5 gallon) sizes

150 psi (1.0 MPa, 10 bar) Maximum Air Inlet Pressure

## D200S 6.5 inch dual post

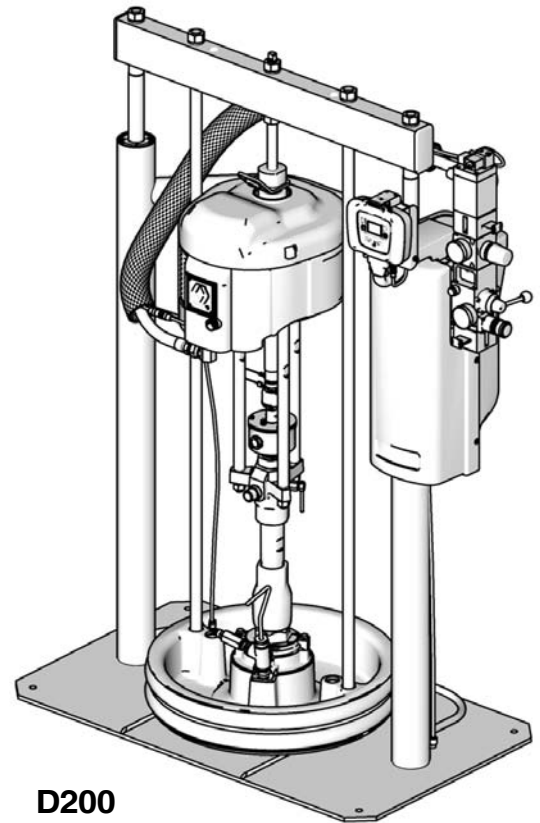
55 gallon (200 liter), 30 gallon (115 liter) sizes  
125 psi (0.9 MPa, 9 bar) Maximum Air Inlet Pressure



### Important Safety Instructions

Read all warnings and instructions in this manual.  
Save these instructions.

See page 6 for model information and approvals.



**D200  
Model CM14BA**

ti10429a

The Graco Control Architecture Electric Components are Listed in Intertek's Directory of Listed Products.



# Contents

<b>Related Manuals</b> .....	<b>3</b>
<b>Warnings</b> .....	<b>4</b>
<b>Models</b> .....	<b>6</b>
<b>Component Identification</b> .....	<b>10</b>
D200 3 in. and D200s 6.5 in. Dual Post .....	10
S20 3 in. Single Post and D60 3 in. Dual Post ..	11
L20c 2in. Elevator .....	13
L20c 2 in. Air Controls .....	14
<b>Installation</b> .....	<b>15</b>
General Information .....	15
Location .....	15
Grounding .....	15
Mechanical Setup .....	16
Connect Remote DataTrak to Power .....	16
Attach and Adjust Drum Low/Empty Sensor ...	17
Light Tower Accessory .....	17
Attach Drum Stops .....	18
<b>Supply System Operation</b> .....	<b>19</b>
Pressure Relief Procedure .....	19
Flush Before Using Equipment .....	19
Start and Adjust Ram .....	19
Start and Adjust Pump .....	21
Change Drums .....	21
Shutdown and Care of the Pump .....	22
Replace Throat Seals .....	22
Remote DataTrak Setup .....	23
<b>Remote DataTrak Controls and Indicators</b> .....	<b>24</b>
<b>Remote DataTrak Operation</b> .....	<b>25</b>
Startup .....	25
Run Mode .....	25
Prime Mode .....	26
Setup Mode .....	26
Diagnostic Mode .....	29
<b>Dimensions</b> .....	<b>34</b>
<b>Schematic</b> .....	<b>36</b>
Remote DataTrak, Light Tower, Drum Low/Empty Sensor .....	36
<b>D200S, D200, S20, and D60 Supply Systems</b>	
<b>Point of Operation Instructions</b> .....	<b>37</b>
Start and Adjust Ram .....	37
Start and Adjust Pump .....	38
Change Drums .....	38
Remote DataTrak Operation .....	38

<b>L20c Supply Systems</b>	
<b>Point of Operation Instructions</b> .....	<b>39</b>
Start and Adjust Ram .....	39
Start and Adjust Pump .....	40
Change Drums .....	40
<b>Technical Data</b> .....	<b>41</b>
<b>Graco Standard Warranty</b> .....	<b>42</b>
<b>Graco Information</b> .....	<b>42</b>

**Note:** The D200s, D200, D60, S20, and L20c Operation Quick Guides on page 37- 40 can be removed.





## Related Manuals

The following manuals are available at [www.graco.com](http://www.graco.com).  
Component Manuals in English:

Manual	Description
313527	Supply Systems Repair-Parts
313528	Tandem Supply Systems Operation
313529	Tandem Supply Systems Repair-Parts
312375	Check-Mate <sup>®</sup> Displacement Pumps Instructions-Parts
312376	Check-Mate <sup>®</sup> Pump Packages Instruction-Parts
311827	Dura-Flo <sup>™</sup> Displacement Pumps (145cc, 180cc, 220cc, 290cc) Instructions-Parts Manual
311825	Dura-Flo <sup>™</sup> Displacement Pumps (430cc, 580cc) Instructions-Parts Manual
311717	Carbon Steel Displacement Pump (1000cc) Instructions-Parts Manual
311828	Dura-Flo <sup>™</sup> Pump Packages (145cc, 180cc, 220cc, 290cc) Instructions-Parts Manual
311826	Dura-Flo <sup>™</sup> Pump Packages (430cc, 580cc) Instructions-Parts Manual
311833	Two-Ball NXT <sup>™</sup> Pump Packages (1000cc) Instructions-Parts Manual
312889	60 cc Check-Mate Displacement Pump Repair Parts Manual
312467	100 cc Check-Mate Displacement Pump Repair Parts Manual
312468	200 cc Check-Mate Displacement Pump Repair Parts Manual
312469	250 cc Check-Mate Displacement Pump Repair Parts Manual
312470	500 cc Check-Mate Displacement Pump Repair Parts Manual
311238	NXT <sup>™</sup> Air Motor (Nxxxxx models) Instructions-Parts
312796	NXT <sup>™</sup> Air Motor (Mxxxxx models) Instructions-Parts
308213	Premier <sup>®</sup> Air Motor Instructions-Parts
312374	Air Controls Instructions-Parts
312491	Pump Fluid Purge Kit
312492	Drum Roller Kit Instruction
312493	Light Tower Kit Instruction
406681	Platen Cover Kit

# Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbol refers to procedure-specific risk. Refer back to these warnings. Additional, product-specific warnings may be found throughout the body of this manual where applicable.

 <b>WARNING</b>	
	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the dispense outlet.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Follow <b>Pressure Relief Procedure</b> in this manual, when you stop dispensing and before cleaning, checking, or servicing equipment.</li> </ul>
	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> in this manual. Disconnect power or air supply.</li> </ul>
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>



# WARNING



## EQUIPMENT MISUSE HAZARD

Misuse can cause death or serious injury.

- Do not operate the unit when fatigued or under the influence of drugs or alcohol.
- Do not exceed the maximum working pressure or temperature rating of the lowest rated system component. See **Technical Data** in all equipment manuals.
- Do not leave the work area while equipment is energized or under pressure. Turn off all equipment and follow the **Pressure Relief Procedure** in this manual when equipment is not in use.
- Check equipment daily. Repair or replace worn or damaged parts immediately with genuine manufacturer's replacement parts only.
- Do not alter or modify equipment.
- Use equipment only for its intended purpose. Call your distributor for information.
- Route hoses and cables away from traffic areas, sharp edges, moving parts, and hot surfaces.
- Do not kink or over bend hoses or use hoses to pull equipment.
- Keep children and animals away from work area.
- Comply with all applicable safety regulations.



## ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power cord before servicing equipment.
- Use only grounded electrical outlets.
- Use only 3-wire extension cords.
- Ensure ground prongs are intact on power and extension cords.
- Do not expose to rain. Store indoors.



## SPLATTER HAZARD

Hot or toxic fluid can cause serious injury if splashed in the eyes or on skin. During blow off of platen, splatter may occur.

- Use minimum air pressure when removing platen from drum.



## TOXIC FLUID OR FUMES HAZARD

Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.

- Read MSDS's to know the specific hazards of the fluids you are using.
- Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.
- Always wear impervious gloves when spraying or cleaning equipment.
- If this equipment is used with isocyanate material, see additional information on isocyanites in Isocyanate Conditions Section of this manual.



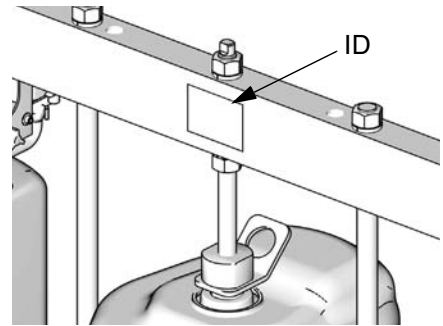
## PERSONAL PROTECTIVE EQUIPMENT


You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

# Models

Check the identification plate (ID) for the 6-digit part number of the supply system. Use the following matrix to define the construction of the supply system, based on the six digits. For example, Part No. **CM14BA** represents a Check-Mate supply system (**CM**), a carbon steel Check-Mate 100 MaxLife® displacement pump with an NXT 2200 air motor with remote DataTrak (pump code **14**), a 3 in. dual post ram with integrated air controls (**B**) and a 55-gallon, uncoated platen with a neoprene seal (**A**).



 Systems with the **GD** as the first and second digits are Dura-Flo supply systems.

Some configurations in the following matrix cannot be built. See the Product Selection guide for available systems.

To order replacement parts, see **Parts** section in manual 313527. The digits in the matrix on the next page do not correspond to the Ref. Nos. in the Parts drawings and lists.

All supply systems with DataTrak and 24 Vdc or 100-240 Vac power supplies are ETL approved.



<b>CM</b>	<b>14</b>	<b>B</b>				<b>A</b>							
<b>First and Second Digit</b>	<b>Third and Fourth Digit</b>	<b>Fifth Digit</b>				<b>Sixth Digit</b>							
		<b>Ram Options</b>				<b>Platen and Seal Options</b>							
	<b>Pump Code</b>	<b>Size</b>	<b>Style</b>	<b>DataTra k Voltage</b>	<b>Air Controls</b>	<b>Platen Size</b>	<b>Platen Style</b>	<b>Platen Materi al</b>	<b>Seal Material</b>				
<b>CM</b> (Supply System with Check-Mate displacement pump)	(See Table 1 for 2-digit Check-Mate Pump Code)	<b>1</b>	2 in.	L20c	no volt	Air Control Panel	<b>B</b>	20 L (5 Gal)	F, SW	CS	Nitrile		
		<b>2</b>	3 in.	S20c	no volt	INT	<b>C</b>	20 L (5 Gal)	F, SW	CS	Polyurethane		
		<b>3</b>	3 in.	S20	no volt	INT	<b>F</b>	20 L (5 Gal)	F, SW	SST	PTFE coated		
		<b>4</b>	3 in.	D60	no volt	INT	<b>G</b>	20 L (5 Gal)	F, DW	CS	Nitrile		
		<b>5</b>	3 in.	D200	no volt	INT	<b>H</b>	20 L (5 Gal)	F, DW	CS	Polyurethane		
		<b>GD</b> (Supply System with Dura-Flo displacement pump)	(See Table 2 for 2-digit Dura-Flo Pump Code)	<b>6</b>	3 in.	D200i	no volt	2-Button Interlock	<b>J</b>	30 L (8 Gal)	F, SW	CS	Nitrile
				<b>7</b>	6.5 in.	D200s	no volt	INT	<b>K</b>	30 L (8 Gal)	F, SW	CS	Polyurethane
				<b>8</b>	6.5 in.	D200si	no volt	2-Button Interlock	<b>L</b>	30 L (8 Gal)	F, SW	SST	PTFE coated
				<b>9</b>	3 in.	D200	24 Vdc	INT	<b>M</b>	30 L (8 Gal)	F, DW	CS	Nitrile
				<b>A</b>	3 in.	D200i	24 Vdc	2-Button Interlock	<b>R</b>	30 L (8 Gal)	F, DW	CS	Polyurethane
<b>B</b>	3 in.			D200	100-240 Vac	INT	<b>S</b>	60 L (16 Gal)	F, SW	CS	Nitrile		
<b>C</b>	3 in.			D200i	100-240 Vac	2-Button Interlock	<b>T</b>	60 L (16 Gal)	F, SW	CS	Polyurethane		
<b>F</b>	6.5 in.			D200s	24 Vdc	INT	<b>U</b>	60 L (16 Gal)	F, SW	SST	PTFE coated		
<b>G</b>	6.5 in.			D200si	24 Vdc	2-Button Interlock	<b>W</b>	60 L (16 Gal)	F, DW	CS	Nitrile		
<b>H</b>	6.5 in.			D200s	100-240 Vac	INT	<b>Y</b>	60 L (16 Gal)	F, DW	CS	Polyurethane		
		<b>J</b>	6.5 in.	D200si	100-240 Vac	2-Button Interlock	<b>7</b>	115 L (30 Gal)	D	CS	EPDM		
		<b>L</b>	3 in.	S20	100-240 Vac	INT	<b>8</b>	200 L (55 Gal)	DR	PTFE coated AL	EPDM		
		<b>M</b>	3 in.	S20	24 Vdc	INT	<b>9</b>	200 L (55 Gal)	DR	AL	EPDM		
		<b>R</b>	3 in.	D60	100-240 Vac	INT	<b>A</b>	200 L (55 Gal)	DR	AL	Neoprene		
		<b>T</b>	3 in.	D60i	100-240 Vac	2-Button Interlock							
		<b>U</b>	3 in.	D60	24 Vdc	INT							
		<b>W</b>	3 in.	D60i	24 Vdc	2-Button Interlock							
		<b>Y</b>	3 in.	D60i	no volt	2-Button Interlock							

## KEY:

S = Single post ram

i = 2-Button Interlock

F = Flat

SW = Single wiper

c = Cart mounted

s = 6.5 inch

D = D Style

DW = Double wiper

D = Dual post ram

INT = Integrated air controls

DR = Dual o-ring

\* Other Available Models: 262868. This model is the same as CM-\_\_-3-B models, such as CM-11-3-B, but uses Check-Mate Pump P40DCS (NXT2200/CM 100) instead of the other pumps listed on page 8.

Table 1: Check-Mate Pump Identification Code/Part No. Index

Pump Code	Pump Part No. (see manual 312376)	Pump Code	Pump Part No. (see manual 312376)	Pump Code	Pump Part No. (see manual 312376)	Pump Code	Pump Part No. (see manual 312376)
<b>NXT 200/CM 60</b>		81	P38SCS	<b>NXT 2200/CM 200</b>		<b>NXT 6500/CM 250</b>	
4A	P05LCS	82	P38SCM	21	P23LCS	39	P55LCS
4B	P05LCM	83	P38SSS	22	P23LCM	3A	P55LCM
4C	P05LSS	84	P38SSM	23	P23RCS	3B	P55RCS
4F	P05LSM	<b>NXT 1800/CM 60</b>		24	P23RCM	3C	P55RCM
<b>NXT 400/CM 60</b>		9A	P61LCS	25	P23LSS	3F	P55LSS
6A	P11LCS	9B	P61LCM	26	P23LSM	3G	P55LSM
6B	P11LCM	9C	P61LSS	27	P23RSS	3H	P55RSS
6C	P11LSS	9F	P61LSM	28	P23RSM	3J	P55RSM
6F	P11LSM	9G	P61RCS	<b>NXT 3400/CM 200</b>		<b>Premier/CM 250</b>	
6G	P11RCS	9H	P61RCM	29	P36LCS	3L	P82LCS
6H	P11RCM	9J	P61RSS	2A	P36LCM	3M	P82LCM
6J	P11RSS	9K	P61RSM	2B	P36RCS	3R	P82LSS
6K	P11RSM	91	P61SCS	2C	P36RCM	3S	P82LSM
61	P11SCS	92	P61SCM	2F	P36LSS	<b>NXT 3400/CM 500</b>	
62	P11SCM	93	P61SSS	2G	P36LSM	51	P14LCS
63	P11SSS	94	P61SSM	2H	P36RSS	52	P14LCM
64	P11SSM	<b>NXT 2200/CM 100</b>		2J	P36RSM	53	P14RCS
<b>NXT 700/CM 60</b>		11	P40LCS	<b>NXT 6500/CM 200</b>		54	P14RCM
7A	P20LCS	12	P40LCM	2L	P68LCS	55	P14LSS
7B	P20LCM	1F	P40LSS	2M	P68LCM	56	P14LSM
7C	P20LSS	1G	P40LSM	2R	P68RCS	57	P14RSS
7F	P20LSM	13	P40RCS	2S	P68RCM	58	P14RSM
7G	P20RCS	14	P40RCM	2T	P68LSS	<b>NXT 6500/CM 500</b>	
7H	P20RCM	1H	P40RSS	2U	P68LSM	59	P26LCS
7J	P20RSS	1J	P40RSM	2W	P68RSS	5A	P26LCM
7K	P20RSM	10	P40SSS	2Y	P68RSM	5B	P26RCS
71	P20SCS	1A	P40SSM	20	P68SCS	5C	P26RCM
72	P20SCM	19	P40SCS	<b>NXT 3400/CM 250</b>		5F	P26LSS
73	P20SSS	<b>NXT 3400/CM 100</b>		31	P29LCS	5G	P26LSM
74	P20SSM	15	P63LCS	32	P29LCM	5H	P26RSS
<b>NXT 1200/CM 60</b>		16	P63LCM	33	P29RCS	5J	P26RSM
8A	P38LCS	1T	P63LSS	34	P29RCM	<b>Premier/CM 500</b>	
8B	P38LCM	1U	P63LSM	35	P29LSS	5L	P39LCS
8C	P38LSS	17	P63RCS	36	P29LSM	5M	P39LCM
8F	P38LSM	18	P63RCM	37	P29RSS	5R	P39LSS
8G	P38RCS	1W	P63RSM	38	P29RSM	5S	P39LSM
8H	P38RCM	1Y	P63RSM	<b>No Pump</b>			
8J	P38RSS	1B	P63SSS	NN			
8K	P38RSM	1C	P63SSM				

See manual 312376 or the ID plate on the pump to determine pump part number.



Table 2: Dura-Flo Pump Identification Code/Part No. Index

Pump Code	Pump Part No. (see manual 311828)
<b>NXT 2200/DF 145SS</b>	
A1	P31LSS
A3	P31HSS
<b>NXT 3400/DF 145SS</b>	
B1	P46LSS
B3	NR
<b>NXT 3400/DF 180SS</b>	
B5	P41LSS
B7	P41HSS
<b>NXT 3400/DF 220SS</b>	
C1	P30LSS
C3	P30HSS
<b>NXT 6500/DF 220SS</b>	
CA	P57LSS
CC	NR
<b>NXT 6500/DF 290SS</b>	
D1	P45LSS
D3	NR
<b>Premier/DF 290SS</b>	
DL	P67LSS
DR	NR

Pump Code	Pump Part No. (see manual 311826)
<b>NXT 3400/DF 430CS</b>	
E1	NR
E2	NR
E3	NR
E4	NR
<b>NXT 3400/DF 430SS</b>	
E5	P15LSS
E6	P15LSM
E7	P15HSS
E8	P15HSM
<b>NXT 6500/DF 430CS</b>	
E9	NR
EA	NR
EB	NR
EC	NR
<b>NXT 6500/DF 430SS</b>	
EF	P32LSS
EG	P32LSM
EH	P32HSS
EJ	P32HSM
<b>Premier/DF 430</b>	
EL	P44LSS
EM	NR
ER	NR
ES	NR
ET	P44LCS
<b>NXT 3400/DF 580CS</b>	
F1	NR
F2	NR
F3	NR
F4	NR
<b>NXT 3400/DF 580SS</b>	
F5	P12LSS
F6	P12LSM
F7	P12HSS
F8	P12HSM

Pump Code	Pump Part No. (see manual 311826)
<b>NXT 6500/DF 580CS</b>	
F9	P22LCS
FA	NR
FB	NR
FC	NR
<b>NXT 6500/DF 580SS</b>	
FF	P22LSS
FG	P22LSM
FH	P22HSS
FJ	P22HSM
<b>Premier/DF 580CS</b>	
FL	P34LSS
FM	NR
FR	NR
FS	NR
FT	P34LCS

Pump Code	Pump Part No. (see manual 311833)
<b>NXT 3400/DF 1000CS</b>	
G1	P06LCS
G3	NR
<b>NXT 3400/DF 1000SS</b>	
G5	NR
G7	NR
<b>NXT 6500/DF 1000CS</b>	
G9	P10LCS
GB	NR
<b>NXT 6500/DF 1000SS</b>	
GF	NR
GH	NR
<b>Premier/DF 1000</b>	
GL	NR
GM	NR
GR	NR
GS	NR

NR = Not released

# Component Identification

## D200 3 in. and D200s 6.5 in. Dual Post

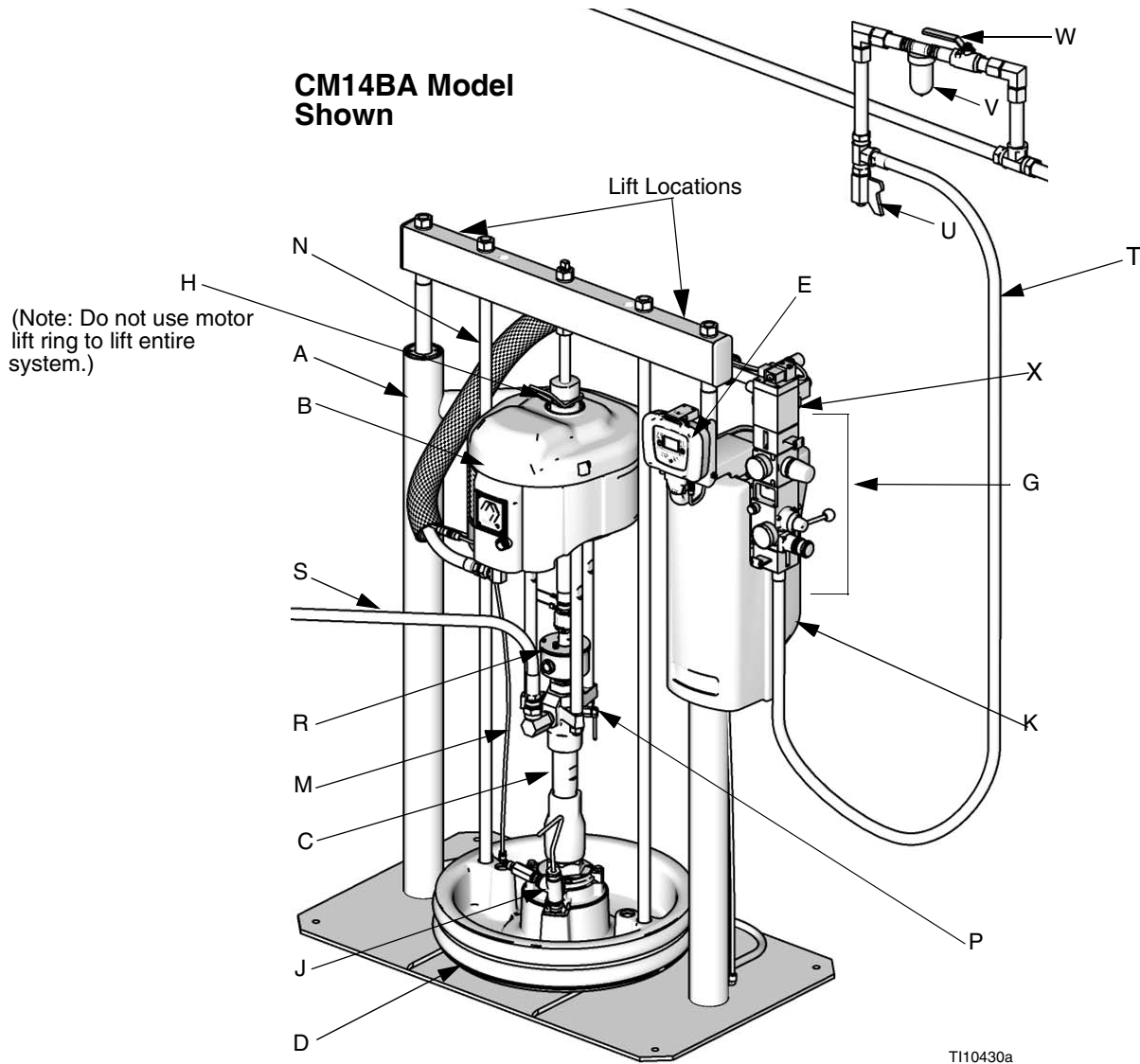


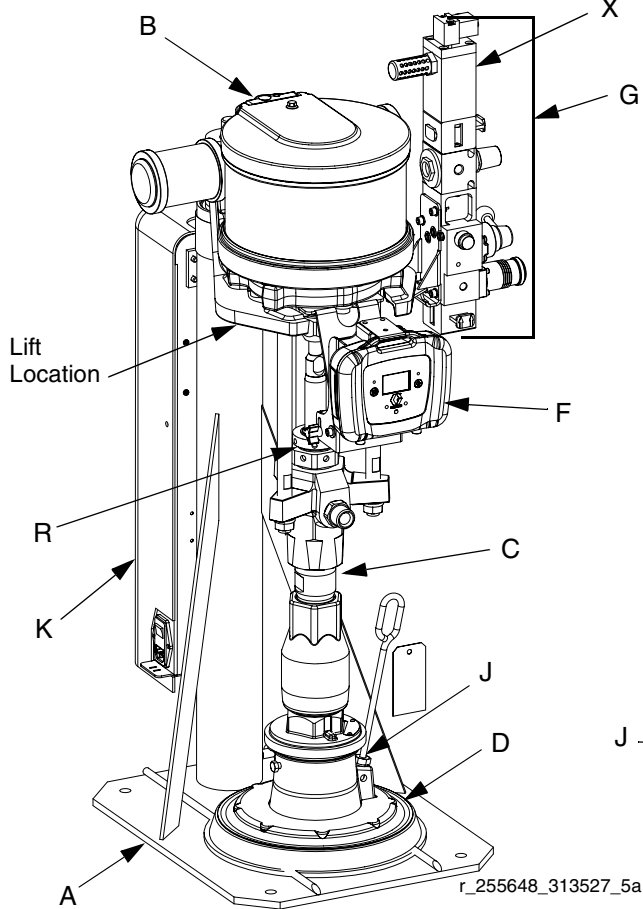
FIG. 1

**Key:**

- |   |   |   |   |
|---|---|---|---|
| A | Ram Assembly  | N | Platen Lift Rod                             |
| B | Air Motor   | P | Pump Bleeder Valve                          |
| C | Displacement Pump   | R | Enclosed Wet Cup                            |
| D | Platen  | S | Fluid Line (not supplied)                   |
| E | Remote DataTrak (single ram systems) or Display Module (tandem systems) | T | Main Air Line (not supplied)                |
| G | Integrated Air Controls (see FIG. 3)                                    | U | Air Line Drain Valve (not supplied)         |
| H | Air Motor Lift Ring   | V | Air Filter (not supplied)                   |
| J | Platen Bleed Port   | W | Bleed Type Air Shutoff Valve (not supplied) |
| K | Power Supply Box  | X | Air Motor Solenoid                          |
| M | Blowoff Air Supply Line   |   |   |

# S20 3 in. Single Post and D60 3 in. Dual Post

Model CM9HLB Shown



Model CM2MRY Shown

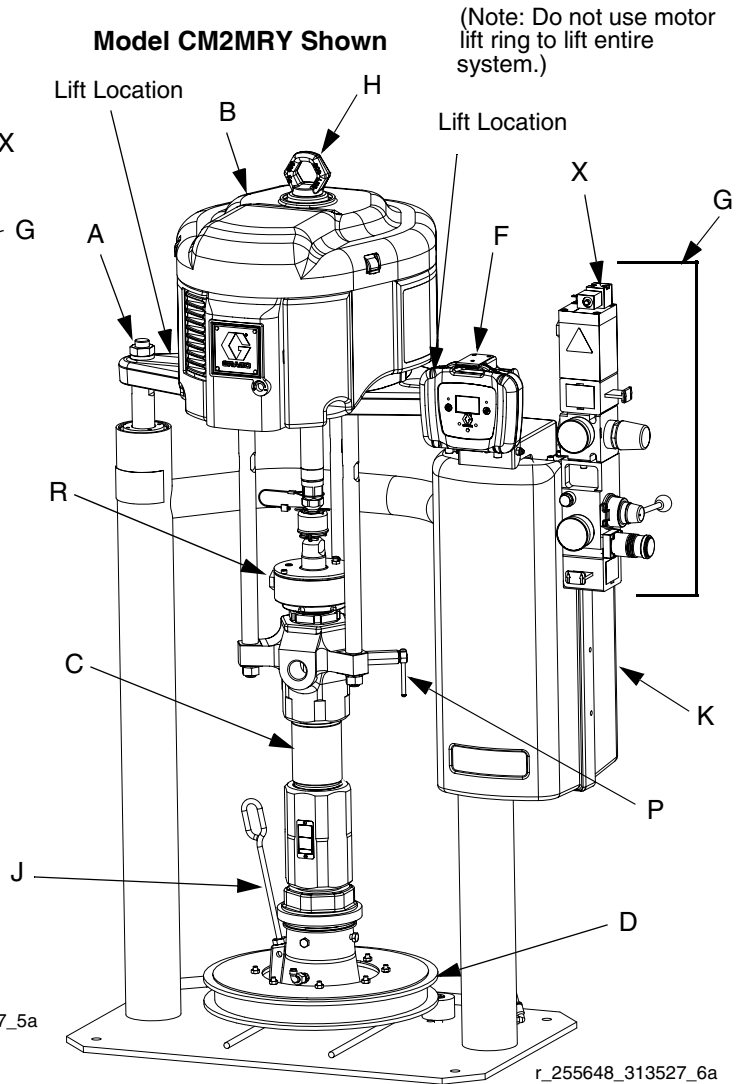


FIG. 2

**Key:**

- A Ram Assembly
- B Air Motor
- C Displacement Pump
- D Platen
- F Remote DataTrak (single ram systems) or Display Module (tandem systems)
- G Integrated Air Controls (see FIG. 3)
- H Lift Ring
- J Platen Bleed Port
- K Power Supply Box (under shrouding)
- P Pump Bleed Valve
- R Enclosed Wet Cup
- S Fluid Line (not supplied, see FIG. 1)
- T Air Line (not supplied, see FIG. 1)
- U Air Line Drain Valve (not supplied, see FIG. 1)
- V Air Filter (not supplied, see FIG. 1)
- W Bleed Type Air Shutoff Valve (not supplied, see FIG. 1)
- X Air Motor Solenoid

## Integrated Air Controls

### D200, D200s, D60, and S20 Models

The integrated air controls include:

- **Main air slider valve (BA):** turns air on and off to the system. When closed, the valve relieves pressure downstream.
- **Ram air regulator (BB):** controls ram up and down pressure and blowoff pressure.
- **Ram director valve (BC):** controls ram direction.
- **Exhaust port with muffler (BD)**
- **Air motor regulator (BE):** Controls air pressure to motor.
- **Air motor slider valve (BF):** turns air on and off to the air motor. When closed, the valve relieves air trapped between it and the air motor. Push the valve in to shutoff. **Remote DataTrak:** The air solenoid (X, FIG. 1), the air motor slider valve (BF), and the main air slider valve (BA) must be open for air to flow. (See **Remote DataTrak Setup**, page 23.)
- **Blowoff button (BG):** turns air on and off to push the platen out of an empty drum.

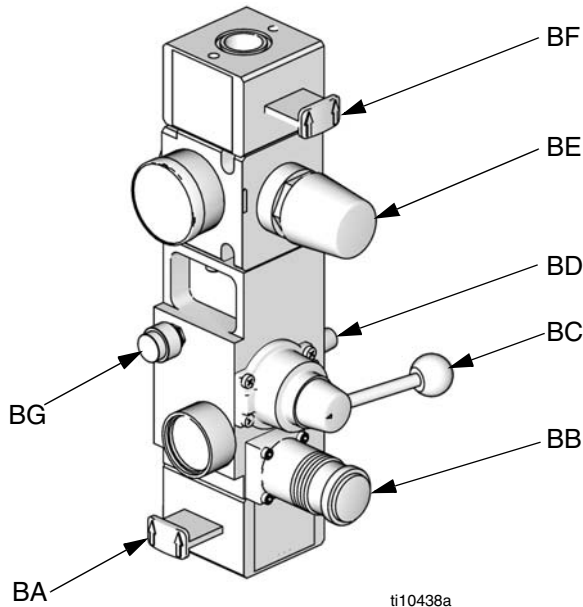


FIG. 3. Integrated Air Controls

## Air Line Accessories

See FIG. 1.

- **Air line drain valve (U)**
- **Air line filter (V):** removes harmful dirt and moisture from compressed air supply.
- **Second bleed-type air valve (W):** isolates air line accessories and supply system for servicing. Locate upstream from all other air line accessories.
- **Air relief valve** (attached to ram air regulator, not visible): automatically relieves excessive pressure.

## 2-Button Interlock Air Controls

### D60i, D200i, and D200si Models

Units that have 2-Button Interlock controls have the following additional components:

- **2-Button Module:** See manual 312374 for information.
- **Roller switch (CA):** shuts off air supply when it contacts the bracket actuator. Operator must push and hold the activation buttons simultaneously to resume ram movement.

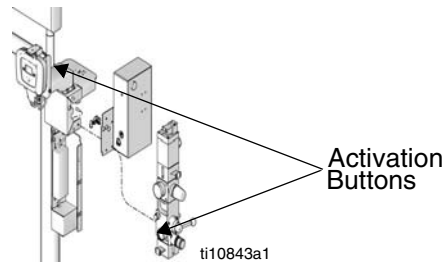


FIG. 4

- **Bracket actuator (CB):** attaches to the platen lift rod. When platen is outside of drum, actuator makes contact with the roller switch.

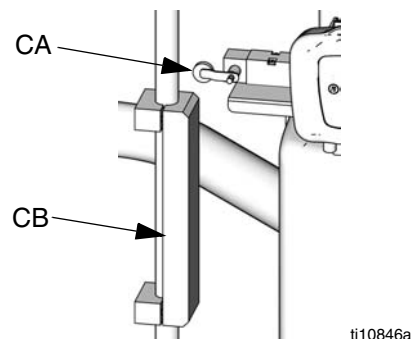
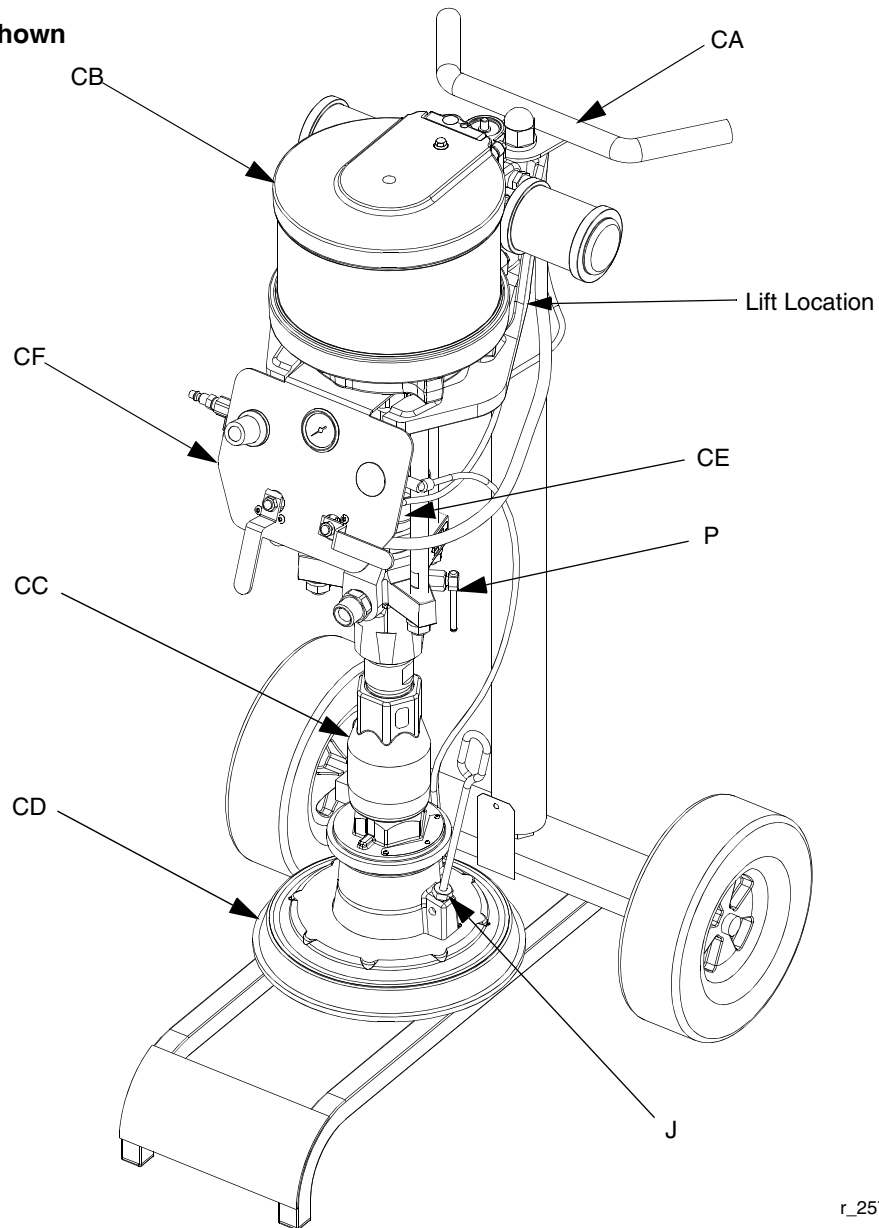


FIG. 5

## L20c 2in. Elevator

CM7B1G Model Shown



r\_257032\_312376\_1e

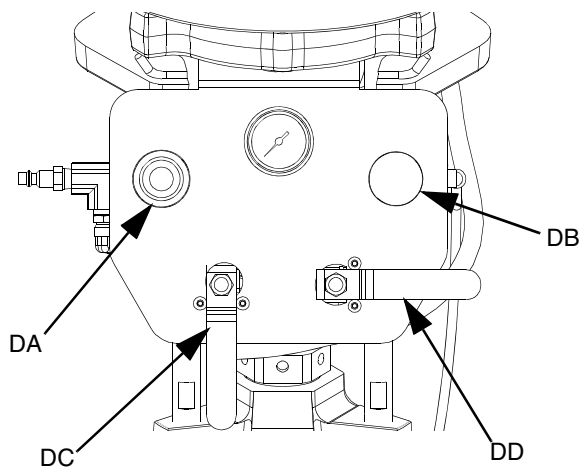
**FIG. 6**

**Key:**

- CA Elevator Cart
- CB Air Motor
- CC Displacement Pump
- CD Platen
- CE Enclosed Wet Cup (behind air controls)
- CF Elevator and Pump Air Controls
- J Platen Bleed Port
- P Pump Bleed Valve

## L20c 2 in. Air Controls

- **Air motor regulator (DA):** Controls air pressure to motor.
- **Blowoff button (DB):** turns air on and off to push the platen out of an empty drum.
- **Air motor shutoff valve (DC):** turns air on and off to the air motor.
- **Elevator director valve (DD):** controls elevator direction.



r\_257302\_312376\_2e


**FIG. 7: Elevator Air Controls**

### Air and Fluid Hoses

Be sure all air hoses (T) and fluid hoses (S) are properly sized and pressure-rated for your system. Use only electrically conductive hoses. Fluid hoses must have spring guards on both ends. Use of a short whip hose and a swivel between the main fluid hose and the gun/valve allows freer gun/valve movement.

# Installation

## General Information

 Reference numbers and letters in parentheses in the text refer to the callouts in the figures.

Accessories are available from Graco. Make certain all accessories are adequately sized and pressure-rated to meet the system's requirements.

FIG. 1, FIG. 2, and FIG. 6 are only guides for selecting and installing system components and accessories. Contact your Graco distributor for assistance in designing a system to suit your particular needs.

## Location

NOTICE
Always lift supply system at proper lift locations (see FIG. 1, FIG. 2, and FIG. 6). Do <b>not</b> lift in any other way.

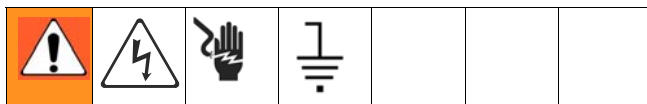
Attach a lifting sling at the proper lift spots. Lift off the pallet using a crane or a forklift.

Position the ram so the air controls are easily accessible. Ensure that there is enough space overhead for the ram to raise fully. (See **Dimensions**, page 34.)

Using the holes in the ram base as a guide, drill holes for 1/2 in. (13 mm) anchors.

Ensure that the ram base is level in all directions. If necessary, level the base using metal shims. Secure the base to the floor using 1/2 in. (13 mm) anchors that are long enough to prevent the ram from tipping.

## Grounding



NOTICE
The equipment must be grounded. Grounding reduces the risk of static and electric shock by providing an escape wire for the electrical current due to static build up or in the event of a short circuit.

**Pump:** use a ground wire and clamp. Loosen grounding lug locknut and washer. Insert one end of supplied ground wire into slot in lug and tighten locknut securely. Connect other end of wire to a true earth ground. See FIG. 8.

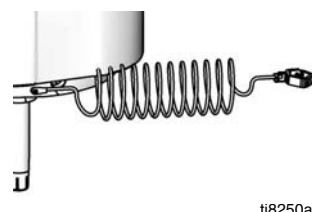


FIG. 8

**Air and fluid hoses:** use only electrically conductive hoses with a maximum of 500 ft. (150 m) combined hose length to ensure grounding continuity. Check electrical resistance of hoses. If total resistance to ground exceeds 29 megohms, replace hose immediately.

**Air compressor:** follow manufacturer's recommendations.

**Spray gun/dispense valve:** ground through connection to a properly grounded fluid hose and pump.

**Fluid supply container:** follow local code.

**Object being sprayed:** follow local code.

**Solvent pails used when flushing:** follow local code. Use only conductive metal pails, placed on a grounded surface. Do not place the pail on a nonconductive surface, such as paper or cardboard, which interrupts grounding continuity.

**To maintain grounding continuity when flushing or relieving pressure:** hold metal part of the dispense valve firmly to the side of a grounded metal pail, then trigger the valve.

## Mechanical Setup

1. Fill displacement pump wet cup 2/3 full with Graco Throat Seal Liquid (TSL).
2. Back-off air regulators to their full counterclockwise position and close all shutoff valves.
3. Connect air line from an air source to the system air inlet. See FIG. 1 or FIG. 2. Refer to the pump performance curves in manual 312376 to determine your air supply flow requirements. Use a supply hose capable of meeting the required flow.

 Quick disconnects restrict flow for large air motors.

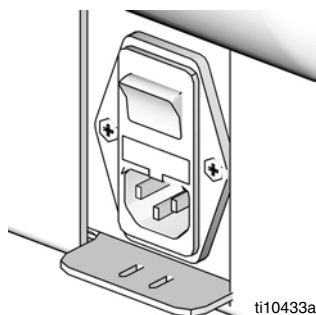
## Connect Remote DataTrak to Power

### 100-240 Vac

The system has an IEC-C14 power input connection located on the back of the power supply box. The user must supply an appropriate adapter. The 100-240 Vac supply must be capable of sourcing at least 1.2 Amps and have supply current protection rated in accordance with the supply wire gauge provided.

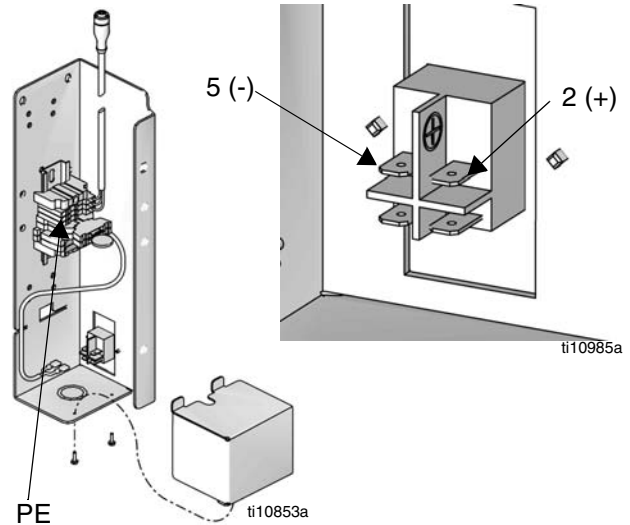
Frequency	Voltage	Max. Current	Phase
50-60 Hz	100-240 Vac	1.2 Amps	1

Have a trained electrician install and inspect power connection per local code. Plug power supply cord into the outlet on the back of the power supply box and into a properly grounded electrical outlet. Use a zip tie, if needed, to secure power cord in place.



### 24 Vdc

Attach 24V Class 2 power supply to terminals on the 24V assembly: +24 Vdc to terminal 2 (+) and -24 Vdc to terminal 5 (-). Attach protective earthing (PE) conductor to terminal marked  $\perp$ .



The 24 Vdc supply must be capable of supplying at least 1.2 Amps and have supply current protection rated at no more than 2.5 Amps.

Voltage	Max. Current
24 Vdc	1.2 Amps

Have a trained electrician install and inspect power connection per local code.



## Attach and Adjust Drum Low/Empty Sensor

For supply systems with remote DataTrak, an optional kit can be purchased to indicate either when the drum is low or when it is empty. Order kit 255469 for a D60 or D200 3 in. ram, 255689 for a D200s 6.5 in. ram, or 257634 for a S20 3 in. ram.

1. Position ram at desired level (low or empty).
2. Attach low/empty sensor bracket (EA) to mounting bracket (EB).

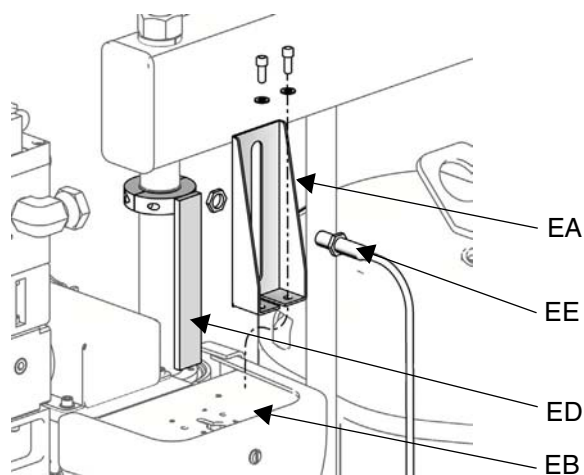


FIG. 9: D200 and D200s supply systems

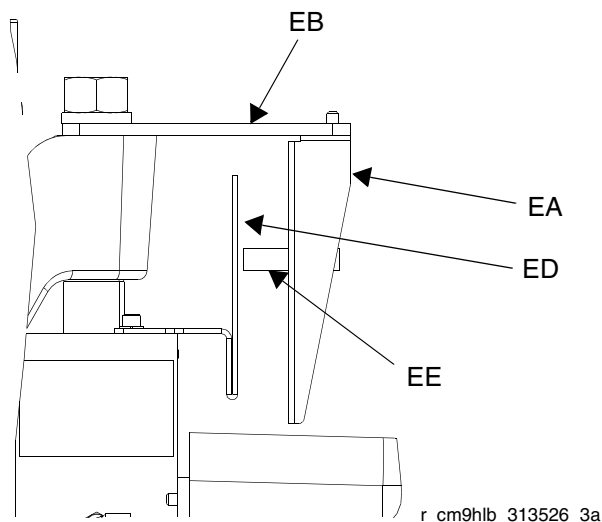



FIG. 10: S20 supply systems

3. To measure either drum low or drum empty, attach one sensor (EE) to the sensor bracket (EA).

4. For D60, D200, and D200s supply systems: Attach the actuator (ED) to the ram piston rod, near the top, so it passes in front of the sensor (EE) at the correct level for drum low or drum empty. See FIG. 9.

 For D60 supply systems: Flip actuator bracket (ED) so that it points upwards instead of downwards to allow it to pass the sensor (EE).

5. For S20 supply systems: Attach the actuator (ED) to the ram cylinder endcap, so the sensor (EE) passes in front of the bracket (ED) at the correct level for drum low or drum empty. See FIG. 10.
6. Make precise adjustments by moving the sensor within the slot on the sensor bracket.
7. Attach the sensor to the corresponding connector on the D-Sub harness of the remote DataTrak.

## Light Tower Accessory

Order the 255467 Light Tower Accessory as a diagnostic indicator for D200s, D200, D60, and S20 supply systems. See TABLE 3 for a description of light tower signals.

Table 3: Light Tower Signals

Signal	Description
Yellow flashing	A low priority error exists.
Yellow on	A medium priority error exists.
Red flashing	A high priority error exists.
Red on	The system is shut down due to error conditions.

## Attach Drum Stops

Only D200s, D200, and D60 Supply systems are shipped with drum stops in place to help position the drum on the ram. For replacement parts, order Kit 255477. The kit includes 2 each of capscrews (FA), lock washers (not shown), and drum stops (FB).

1. Locate the correct set of mounting holes on the ram base.
2. Using the capscrews (FA) and lock washers (not shown), attach the drum stops (FB) to the ram base.

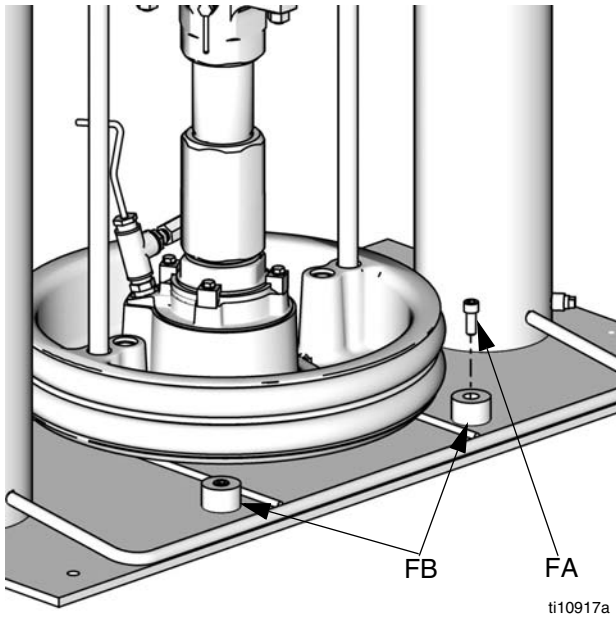


FIG. 11

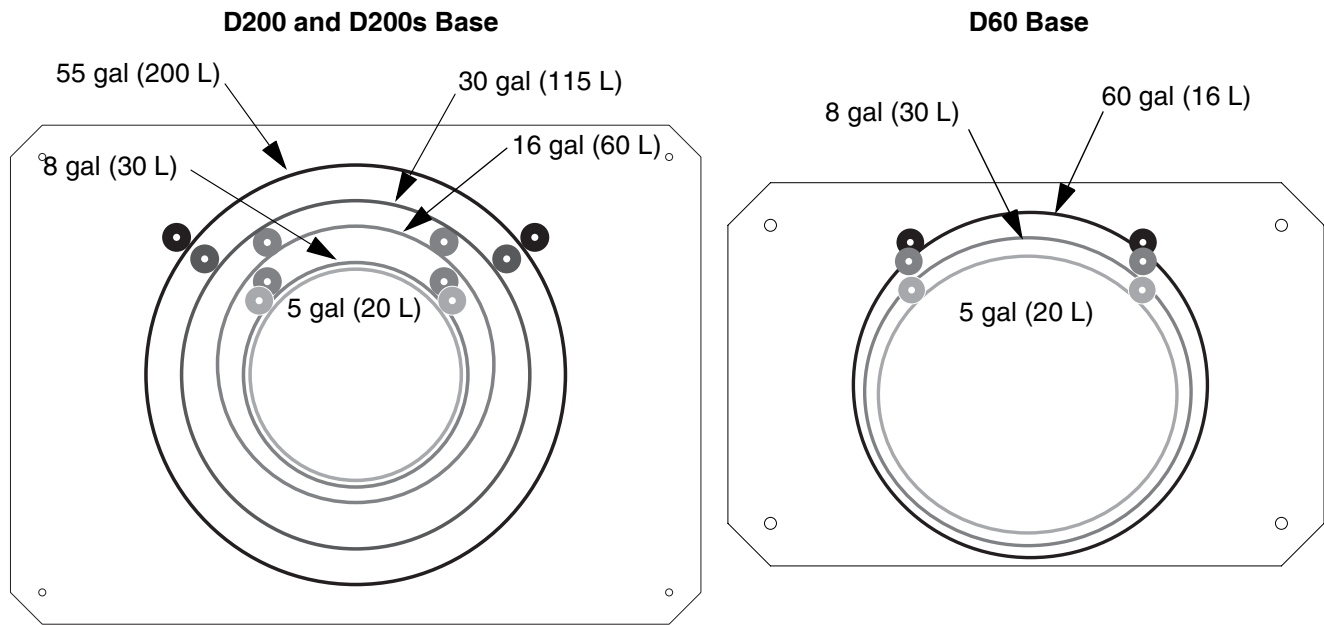
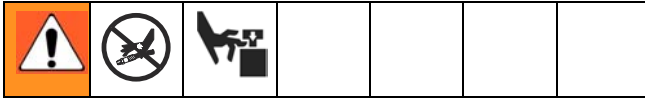


FIG. 12: Ram Base

# Supply System Operation



## Pressure Relief Procedure

1. Lock the gun/valve trigger.
2. **For D200s, D200, S20, and D60 Air Controls:** See FIG. 3, page 12.
  - a. Close the air motor slider valve (BF) and the main air slider valve (BA).
  - b. Set the ram director valve (BC) to DOWN. The ram will slowly drop.
  - c. Jog the director valve up and down to bleed air from ram cylinders.
3. **For L20c Air Controls:** See FIG. 7, page 14.
  - a. Close the air motor valve (DC) and the elevator director valve (DD). The ram will slowly drop.
4. Unlock the gun/valve trigger.
5. Hold a metal part of the gun/valve firmly to the side of a grounded metal pail, and trigger the gun/valve to relieve pressure.
6. Lock the gun/valve trigger.
7. Open the fluid line drain valve and the pump bleeder valve (P). Have a container ready to catch the drainage.
8. Leave the pump bleeder valve (P) open until ready to spray again.

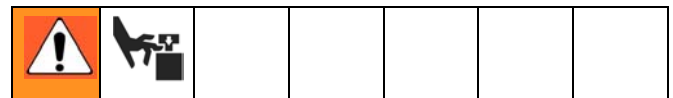
*If you suspect that the spray tip/nozzle or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, very slowly loosen the tip guard retaining nut or hose end coupling and relieve pressure gradually, then loosen completely. Now clear the tip/nozzle or hose.*

## Flush Before Using Equipment

The pump was tested with lightweight oil, which is left in the fluid passages to protect parts. To avoid contaminating fluid with oil, flush the pump with a compatible solvent before use. See pump manual for flushing directions.


## Start and Adjust Ram

### D200 3 in. and D200s 6.5 in. Dual Post



Moving parts can pinch or amputate fingers. When the pump is operating and when raising or lowering the ram, keep fingers and hands away from the pump intake, platen, and lip of the drum.

1. Refer to FIG. 1 and FIG. 3. Close all air regulators and air valves.
2. Open main air slider valve (BA) and set ram air regulator (BB) to 40 psi (0.28 MPa, 2.8 bar). Set director valve handle (BC) to UP and let the ram rise to its full height. **2-Button Interlock:** If the system has this feature, ram will stop as it nears the top. Press and hold both buttons to raise ram completely. See FIG. 3 on page 12.
3. Lubricate the platen seals (D) with grease or other lubricant compatible with the fluid you will pump.
4. Remove the drum cover and smooth the surface of the fluid with a straightedge.
5. Put a full drum of fluid on the ram base, slide it back against the drum stops, and center it under the platen (D). An optional drum roller kit is available for D200 and D200s supply systems to make it easier to load the drum on the base. Order Kit 255627.

 To avoid damage to the platen seals, do not use a drum that is dented or damaged.

6. Remove bleed stick from platen bleed port (J).
7. If drum has a plastic liner, pull it over edge of drum. Secure liner with tape wrapped around circumference of drum.

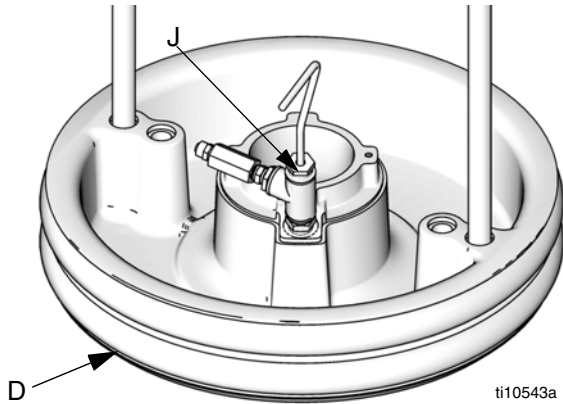


FIG. 13

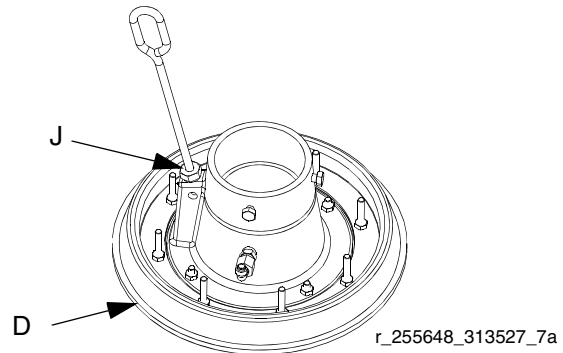
8. Set the director valve (BC) to DOWN and lower the ram until fluid appears at the top of the platen bleed port (J). Adjust ram air regulator (BB) as needed. Set the director valve (BC) to neutral and close the platen bleed port (J). **2-Button Interlock:** If system has this feature, press and hold both buttons to start lowering the ram. See FIG. 3, page 12.

### L20c 2 in. Elevator, S20 3 in. Single Post, and D60 3 in. Single Post

1. Raise ram:
  - a. **For S20 and D60:** Open the main air slider valve (BA) and set the ram air regulator (BB) to 40 psi (0.28 MPa, 2.8 bar). Set director valve handle (BC) to UP and let the ram rise to its full height. **2-Button Interlock:** If the system has this feature, ram will stop as it nears the top. Press and hold both buttons to raise ram completely. See FIG. 3 on page 12.
  - b. **For L20c:** Set elevator director valve (DD) to UP and let the ram rise to its full height.
2. Lubricate the platen seals (D) with grease or other lubricant compatible with the fluid you will pump.
3. Put a full drum on the ram base and center it under the platen (D).
4. Remove the drum cover and smooth the surface of the fluid with a straightedge. To prevent air from

being trapped under the platen, scoop fluid from the center of the pail to the sides, to make the surface concave.


5. Adjust the pail to be sure it is aligned with the platen, and remove the bleed stick to open the platen bleed port (J).
6. With hands away from the pail and the platen, push down on the director valve (BC) handle, and lower the ram until the platen rests on the lip of the pail. **For S20 and D60 only:** Move the director valve handle to the horizontal position (neutral).




7. Lower ram:
  - a. **For S20 and D60:** Set the director valve (BC) to DOWN and continue to lower the ram until fluid appears at the platen bleed port (J) and close the platen bleed port. Set the director valve to neutral, reinstall the vent handle, and tighten securely.
  - b. **For L20c:** Turn elevator director valve (DD) to DOWN and continue to lower the ram until fluid appears at the platen bleed port (J). Close the platen bleed port (J).

## Start and Adjust Pump

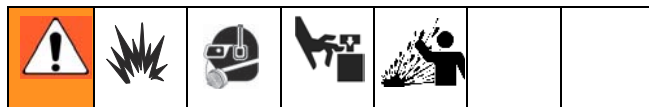
1. Connect pump outlet fittings and hose (not supplied).

 Be sure all components are adequately sized and pressure rated to meet the system's requirements.

2. Be sure the pump air valve is closed. Then set the ram air regulator (BB) to about 50 psi (0.35 MPa, 3.5 bar). Set the director valve (BC) or elevator director valve (DD) to DOWN. **Remote DataTrak:** If system has this feature, press the prime/flush key (see page 26).
3. Start the pump as explained in the separate pump instruction manual.
4. Keep the director valve (BC) or elevator director valve (DD) set to DOWN while pump is operating.




 Increase air pressure to the ram if the pump does not prime properly with heavier fluids. Decrease air pressure if fluid is forced out around the top seal or platen.

## Change Drums



1. Stop the pump.
  - a. **For D200s, D200, S20, and D60:** Push in the air motor slider valve (BF) to stop the pump.
  - b. **For L20c:** Turn air motor valve (DC) off to stop the pump.

2. Raise the platen out of the drum.
  - a. **For D200s, D200, S20, and D60:** Set ram director valve (BC) to UP to raise the platen (D) and immediately press and hold the blowoff air button (BG) until the platen (D) is completely out of drum. Use minimum amount of air pressure necessary to push the platen out of the drum.
  - b. **For L20c:** Set elevator director valve (DD) to UP to raise the platen (D) and immediately press and hold the blowoff air button (DB) until the platen (D) is completely out of drum.
3. Follow steps 4-8.

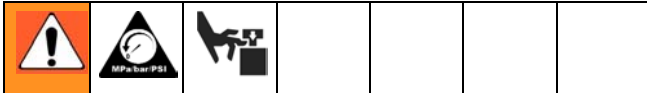
						
Excessive air pressure in the material drum could cause the drum to rupture, causing serious injury. The platen must be free to move out of the drum. Never use drum blowoff air with a damaged drum.						

4. Release the blowoff air button and allow the ram to rise to its full height. **2-Button Interlock:** If system has this feature, the ram will stop as it nears the top. Press and hold both buttons to raise ram completely. See FIG. 4, page 12.
5. Remove empty drum.
6. Inspect platen and, if necessary, remove any remaining material or material build-up.
7. Place full drum on ram base.
8. Lower the ram and adjust the position of the drum relative to the platen. See **Start and Adjust Ram** on page 19.

## Shutdown and Care of the Pump

1. Set the ram director valve (BC) or elevator director valve (DD) to DOWN.
2. Follow the **Pressure Relief Procedure** on page 19.
3. Follow the pump shutdown instructions in separate pump manual.

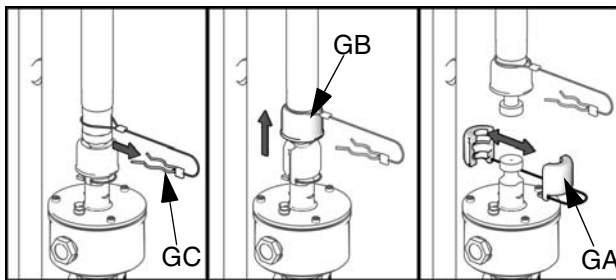
## Replace Throat Seals



### Quick Coupler

Remove wet cup from displacement pump while attached to the ram to replace throat seals.

1. Ensure displacement pump is at bottom of stroke.
2. Follow the **Pressure Relief Procedure** on page 19.
3. Remove Quick Coupler:  
Remove clip (GC), and slide coupling cover (GB) up to remove coupling (GA).



ti10508a


4. Remove Threaded Coupler: (not shown)  
Loosen and remove coupling nut as described in pump packages manual 312376.
5. Lift air motor rod to bring rod to top of stroke.
6. Remove wet cup and packing cartridge according to instructions in displacement pump manual(s).

## Remote DataTrak Setup

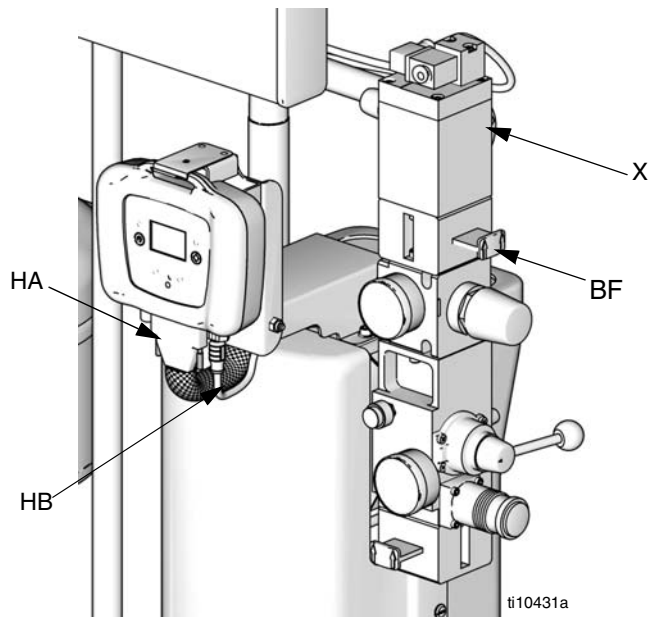
The remote DataTrak display unit comes fully assembled. Use the following instructions and figure to connect remote DataTrak to the supply system.

The system requires either 100-240 Vac, 50/60 Hz input, or 24 Vdc to the power supply. Ensure that the main disconnect rocker switch is set to OFF (O). Connect power to the DataTrak unit as detailed in **Connect Remote DataTrak Units to Power**, page 16.

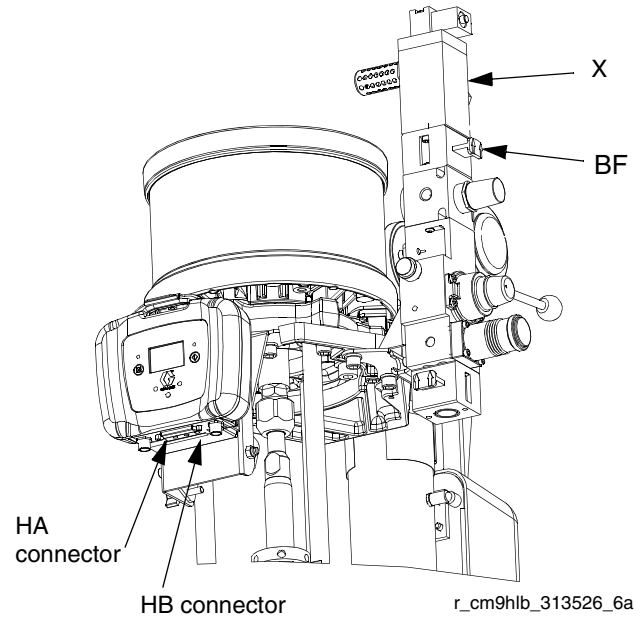
1. Feed CAN cable (HB) and D-Sub cable (HA) under the remote DataTrak bracket and attach to corresponding connectors on remote DataTrak display.

 The CAN cable (HB) can connect to either of the two CAN style connectors on the remote DataTrak.

2. Snap remote DataTrak unit to mount on ram supply system.



**Fig. 14: D200, D200s, and D60 supply systems**



**Fig. 15: S20 supply systems**

3. **Drum Low/Empty Sensor:** If system has this feature, attach sensor cable to the corresponding connector on the D-Sub harness. See **Drum Low/Empty Sensor**, page 15.
4. **Light Tower:** If system has this feature, attach the connector on the light tower cable to the corresponding connector on the D-Sub harness. See manual 312493.
5. **Solenoid:** Attach the connector on the D-Sub harness to the corresponding connector on the solenoid (X).

# Remote DataTrak Controls and Indicators

## Key for FIG. 16

SC Display Screen

LE LED (diagnostic indicator when lit)

FR Flow Rate Units, user settable to:

↕ /min, = cycles per minute

gpm [US] = gallons per minute, United States

gpm [UK] = gallons per minute, United Kingdom

oz/min [US] = ounces per minute United States

oz/min [UK] = ounces per minute United Kingdom

l/min = liters per minute

cc/min = cubic centimeters per minute

VU Volume Units

PF Prime/Flush Key

RK Reset/Cancel Key (also used to scroll)

CF Cycle/Flow Rate

JT Job Total Counter, resettable

MC Maintenance Counter

MS Maintenance Counter Setpoint

DV Drum Volume Remaining

DS Drum Size

DF Drum Fill Volume

RT Runaway Protection (enable/disable)

RS Runaway Cycle Rate

PV Displacement Pump Volume



ti10249A

SC; See Details at right.

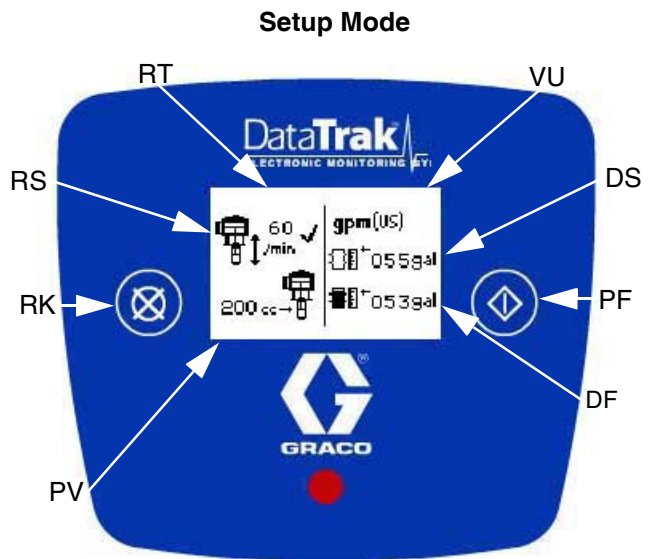
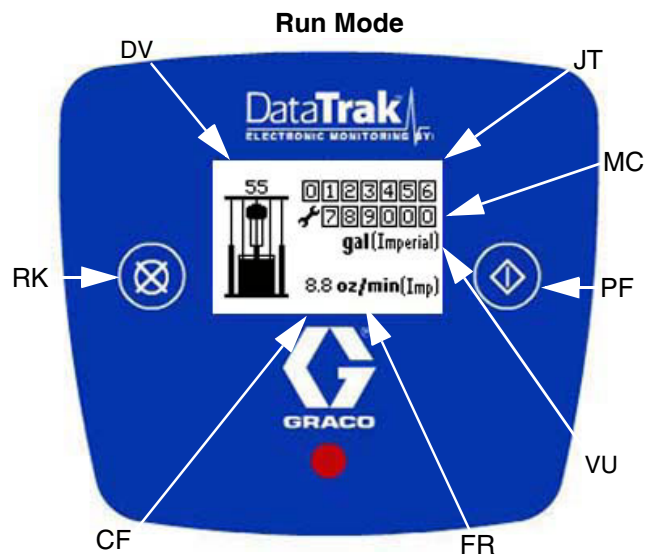


FIG. 16. Remote DataTrak Controls and Indicators



# Remote DataTrak Operation

## NOTICE

To prevent damage to soft key buttons, do not press the buttons with sharp objects such as pens, plastic cards, or fingernails.

## Startup

1. Turn the air motor slider valve (BF) off before turning the remote DataTrak power on.

## NOTICE

If the motor air valve is not turned off, the air supply to the motor will automatically turn on via activation of the air solenoid (X) when the display changes from the Splash screen to Run mode.

2. Turn on the remote DataTrak system using the rocker switch on the ram power supply.

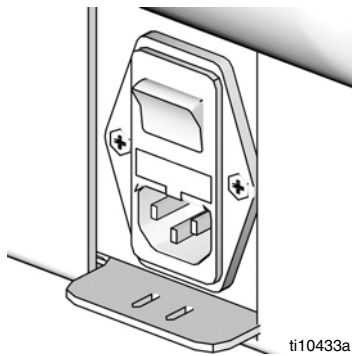


FIG. 17

3. The Splash screen (FIG. 18) will flash on while the progress bar fills from left to right. It will then go directly to Run mode (FIG. 19).
4. Follow the Start and Adjust Pump procedure in the pump manual.



FIG. 18: Splash Screen

## Run Mode

See FIG. 16 and FIG. 19.

The Run Mode screen displays the resettable job total counter (JT), maintenance counter (MC), cycle/flow rate (CF), and the remaining volume in the drum (DV) in both numeric and icon versions.

All items are displayed using the defined volume units (VU).

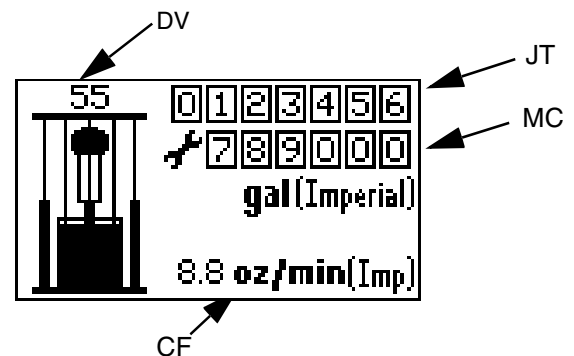



FIG. 19: Run Mode Screen

## Key Functions When in Run Mode

1. To enter Prime Mode, press and release .
2. To enter Setup Mode (page 26), press and hold for 3 seconds.
3. To enter Diagnostic Mode (page 29), press and release . The system will enter Diagnostic Mode only if there are active warnings/alarms.
4. To reset the job total counter, press and hold from Run Mode for 3 seconds.

## Prime Mode

See FIG. 20.

1. Press  to enter Prime Mode screen. The Prime symbol (PS) will appear in the display and the LED (B, FIG. 16) will flash.

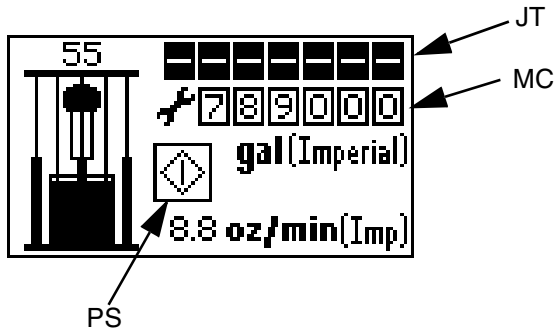







FIG. 20: Prime Mode Screen

2. While in Prime Mode, the job total counter (JT) is blank and will not count. However, the maintenance counter (MC) will continue to decrement.
3. When a new drum is installed, press and hold  while in Prime Mode to reset the drum volume remaining (DV) to the drum fill volume (DF).
4. To exit Prime Mode, press . The Prime symbol will disappear and the LED will stop flashing; the screen will return to Run Mode (FIG. 19).
5. To enter Setup Mode, press and hold  for 3 seconds.

## Setup Mode

 If a key is not pressed within one minute of entering a setup screen, the system will return to Run Mode (FIG. 19).

See FIG. 16. Press and hold  for 3 seconds.

- If a password has not been assigned (set to '0000'), the system will go directly to Setup screen 1.

## Password Screen

If a password has been assigned (not set to '0000'), the Password screen will appear (FIG. 21). Enter the password to access the Setup screens.

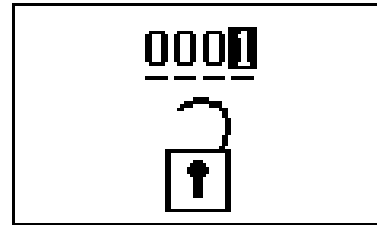








FIG. 21: Password Screen



1. To enter a password, press  to enter edit mode.
2. Once in edit mode, press  to scroll through digits.
3. Press  to select the correct digit and move on to the next.
4. When password is correct, press  on the right-most digit to submit the password.

## Setup Screen 1

Use Setup screen 1 to set runaway cycle rate (RS), enable/disable runaway protection (RT), select pump volume per cycle (PV), select flow rate units (FR), enter drum size (DS), and enter drum fill volume (DF). See FIG. 22.

1. Press  to toggle from field to field through the screen.

 If you go past a field you want to edit, toggle through the remaining fields, exit the Setup mode, and reenter Setup. It is impossible to back up in the Setup screens.

2. Press  to scroll through available values for each field.
3. Press  again to set the value and move the cursor to the next data field.

### Runaway Cycle Rate/Enable Runaway Protection

Graco recommends setting runaway cycle rate (RS) to 60 or less. Choose a value that is just above the maximum cycle rate of the application.



When runaway protection is enabled (RT), a ✓ will appear on the setup screen. See FIG. 22.

### Displacement Pump Volume

Press to scroll through the available displacement pump volumes (PV) in cc per cycle. set the values to the pump size installed. Refer to manual 312375 or the marking on the displacement pump cylinder.

### Flow Rate Units

Press to scroll through the available flow rate units. See **Key** on page 24. The selected units will be used to display flow rate and volume on the main Run screen and most of the setup values.

Initially, choose units that will allow easy definition of the setup values (e.g. drum volume in gallons). Then, return and select the flow rate unit to display on the Run screen. The defined setup values will convert automatically.

### Drum Size

Use DS to enter the size of the container.

### Drum Fill Volume

Use the Drum Fill Volume field (DF) to enter the exact volume of material in the drum. Contact supplier for exact volume. This value is used to determine the remaining volume in the drum.

- To move to Setup screen 2, move the cursor to the Drum Fill Volume field (DF), then press once more.

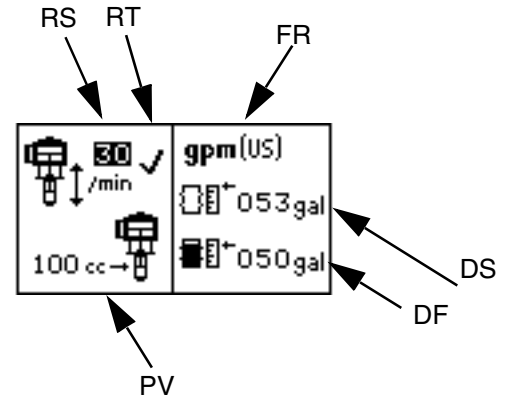


FIG. 22: Setup Screen 1

### Setup Screen 2

Use Setup screen 2 to set the maintenance counter setpoint (MC), reset the maintenance counter, enable/disable diagnostic codes (EC), and choose whether the E7 drum icon (DL) will indicate when the drum is low or when the drum is completely empty.

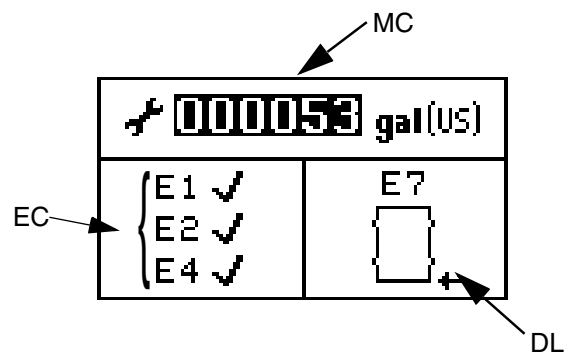



FIG. 23: Setup Screen 2

- Press to toggle from field to field through the screen.
- Press to scroll through available values for each field.
- Press again to set the value and move the cursor to the next data field.

### Maintenance Counter

Use the maintenance counter setpoint (MS) to set the maintenance schedule based on the units displayed. Press and hold for 3 seconds when the entire MS field is highlighted to reset the MC value.

- See page 30 for a description of E1, E2, and E4 diagnostic codes.


 When E1, E2, and E4 diagnostic options are enabled, a ✓ will appear on the setup screen. See FIG. 23.


### Drum Low/Empty Diagnostic Code

The E7 drum icon can represent either a drum low or a drum empty.

**Drum Low:** A drum low setting will result in a warning condition. The icon will show as an almost empty drum. The light tower and diagnostic LED will signal a warning. The pump will continue to cycle.

**Drum Empty:** A drum empty setting will result in an alarm condition. The icon will show as a completely empty drum. The light tower and diagnostic LED will signal an alarm. The pump will stop cycling.

Press  while E7 is selected to toggle between these options.

- To enter Setup screen 3, move the cursor to the E7 drum setting, then press  once more.

### Setup Screen 3

Setup screen 3 displays a non-resettable grand total counter (GT) at the top. Use Setup screen 3 to set the password (PW), assign a time limit for the screensaver (SS), and adjust the LCD contrast (CS).

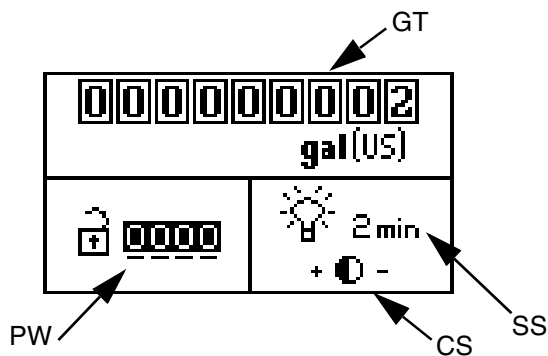









FIG. 24

- Press  to scroll through available values for each field.
- Press  again to set the value and move the cursor to the next data field.

 The screensaver turns off the backlight of the LCD after the specified time has elapsed. **A setting of 0 minutes is not recommended** because it turns off the screensaver, leaving the backlight on constantly.

 When in the contrast setting field press  to adjust the contrast + (up) or - (down) respectively.

- To return to the Run screen, move the cursor to the contrast setting, then press  once more. If you entered Setup Mode from Prime Mode, you will be returned to that screen.


- Press  to toggle from field to field through the screen.


## Diagnostic Mode


### Diagnostics

Remote DataTrak can diagnose several problems with the supply system. When the monitor detects a problem, the LED (B, FIG. 16) will flash and a diagnostic code will appear on the display. See Table 4, page 33.

If the accessory light tower kit is installed a light will illuminate or flash on the tower. See TABLE 4.

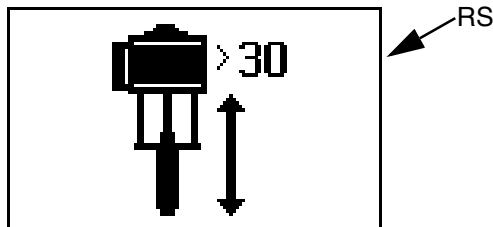
 Diagnostic screens will become the active screen as soon as the diagnostic code condition is detected. See TABLE 4.

To acknowledge the diagnosis and return to the normal operating screen, press  once. To clear a diagnostic code, see the section specific to the code.


See FIG. 16. Press and release  to access the Diagnostic screens. The system will enter Diagnostic Mode only if active warnings/alarms are present.




### Runaway Diagnostic Code Screen

See FIG. 25. If pump runaway occurs, the Runaway screen becomes active, stopping the pump.




**FIG. 25: Runaway Diagnostic Code Screen**

1. Correct the condition causing the diagnostic code. See TABLE 4, page 33.
2. Press and release  to acknowledge the diagnostic code and return to the previous screen.

3. To clear the Runaway diagnostic code:
  - a. Press and release  to enter Diagnostic Mode from Run Mode (FIG. 19).
  - b. Press and release  to scroll to the Runaway Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
  - c. Press and hold  for 3 seconds while on the runaway Diagnostic screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

#### NOTICE

Clearing this diagnostic code will immediately cause the air solenoid to activate, applying air to the motor.

 To disable runaway monitoring, go to setup mode and set runaway value to 0 (zero) or toggle (RT) off. See FIG. 22.

## Diving Up Diagnostic Code Screen

See FIG. 26. If the pump shows diving up symptoms and the E1 Diagnostic Code is enabled, the Diving Up screen becomes active.

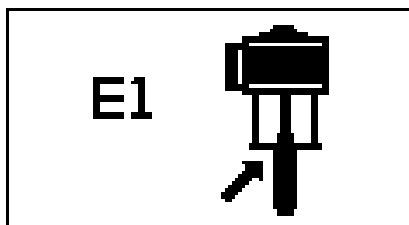






FIG. 26: Diving Up Diagnostic Code Screen

1. Press and release  to exit the Diving Up screen. This will set the diagnostic code as a standing diagnostic code. A standing diagnostic code has not been cleared, simply acknowledged.
2. Correct the condition causing the diagnostic code. See TABLE 4, page 33.
3. To clear the diagnostic code, navigate to the Diving Up diagnostic screen.
  - a. Press and release  to enter Diagnostic Mode from Run Mode.
  - b. Press and release  to scroll to the Diving Up Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
  - c. Press and hold  for 3 seconds while on the Diving Up Diagnostic screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

## Diving Down Diagnostic Code Screen

See FIG. 27. If the pump shows diving down symptoms and the E2 Diagnostic Code is enabled, the Diving Down screen becomes active.

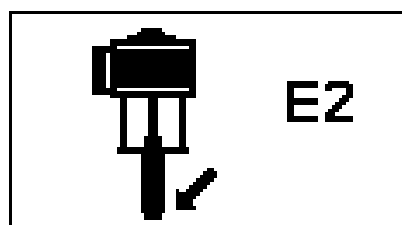




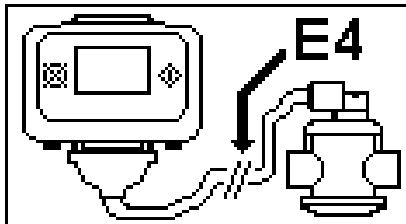


FIG. 27: Diving Down Diagnostic Code Screen


1. Press and release  to exit the Diving Down screen.
2. Correct the condition causing the diagnostic code. See TABLE 4, page 33.
3. To clear the diagnostic code, navigate to the Diving Down diagnostic screen.
  - a. Press and release  to enter Diagnostic Mode from Run Mode.
  - b. Press and release  to scroll to the Diving Down Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
  - c. Press and hold  for 3 seconds while on the Diving Down Diagnostic Screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

## Disconnected Solenoid Diagnostic Code Screen

See FIG. 28. If the system detects a disconnected air motor solenoid and the E4 Diagnostic Code is enabled, the Disconnected Solenoid screen becomes active.

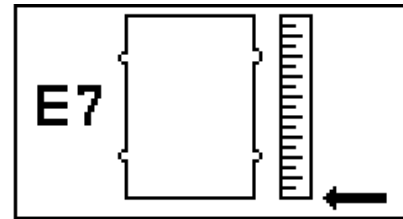


**FIG. 28: Disconnected Solenoid Diagnostic Code Screen**

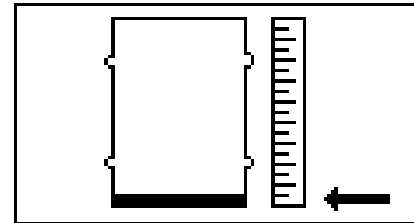
1. Press and release  to exit the Disconnected Solenoid screen.
2. Correct the condition causing the diagnostic code; see TABLE 4, page 33.
3. This diagnostic code will automatically clear when the system detects that the solenoid is connected.

## Drum Low/Empty Diagnostic Code Screen


See FIG. 29 and FIG. 30. If the drum low/empty sensor trips, the Drum Low or Drum Empty screen becomes active, depending on which sensor setting is chosen, see page 28.



**FIG. 29: Drum Empty Diagnostic Code Screen**



**FIG. 30: Drum Low Diagnostic Code Screen**

1. Press and release  to exit the Drum Low/Empty screen. This will set the diagnostic code as a standing diagnostic code. A standing diagnostic code has not been cleared, simply acknowledged.
2. Replace the low or empty drum with a full drum. When the sensor no longer detects a low or empty drum the diagnostic code will clear automatically.

## Reed Switch Diagnostic Code Screen

See FIG. 31.

If the system detects an air motor reed switch error, the Reed Switch Diagnostic screen becomes active.

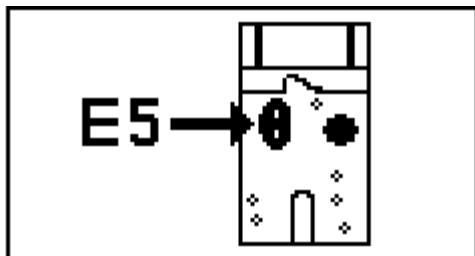






FIG. 31. Reed Switch Diagnostic Code Screen

1. Press and release  to exit the Reed Switch Diagnostic screen.
2. Correct the condition causing the diagnostic code. See TABLE 4, page 33.
3. To clear the diagnostic code, navigate to the Reed Switch diagnostic screen.
  - a. Press and release  to enter Diagnostic Mode from Run Mode.
  - b. Press and release  to scroll to the Reed Switch Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.
  - c. Press and hold  for 3 seconds while on the Reed Switch Diagnostic Screen to clear the diagnostic code and scroll to the next available Diagnostic screen, or return to the previous Run screen if no other Diagnostic screens are active.

## Maintenance Counter Expired Screen

See FIG. 32.

If the system has counted down to 0 from the setpoint for number of cycles/gallons/liters, the Maintenance Counter Expired Screen becomes active.

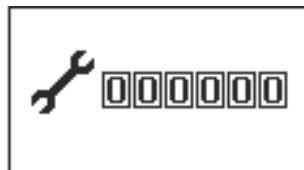


FIG. 32. Maintenance Counter Expired Screen


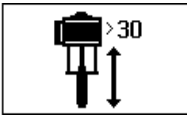


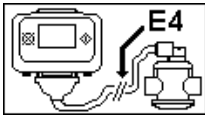
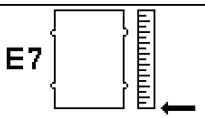
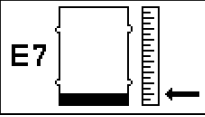
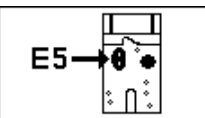

1. Press and release  to exit the Maintenance Counter Expired screen.
2. Perform necessary maintenance.
3. Reset the Maintenance Counter. See **Setup Screen 2**, page 27.

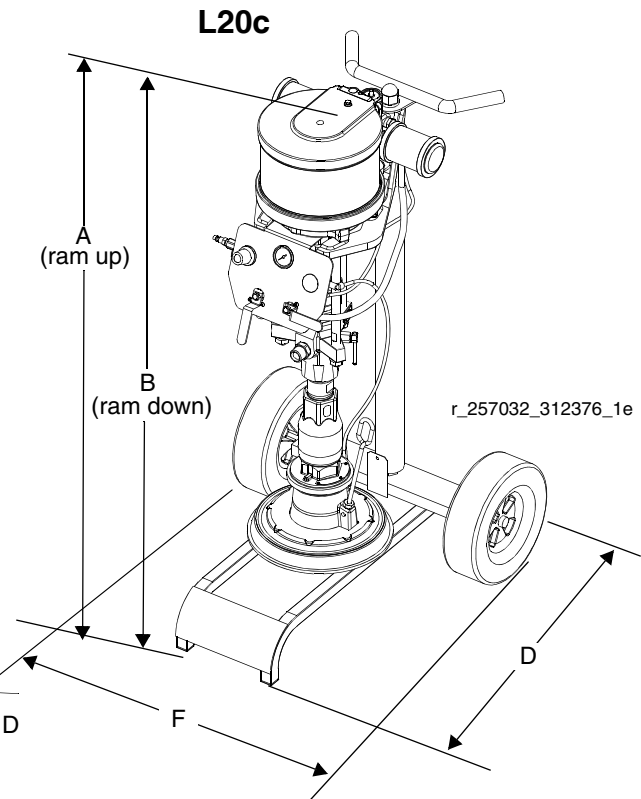
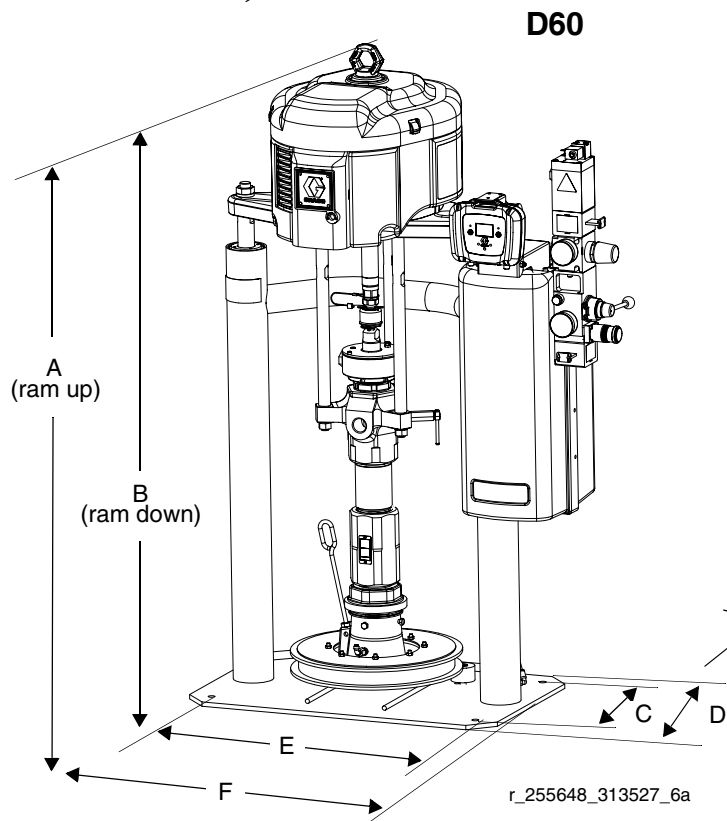
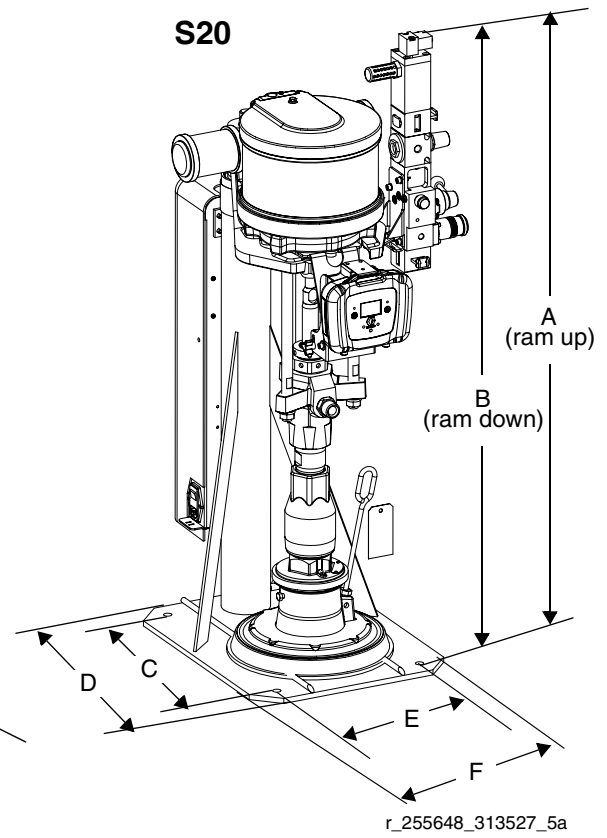
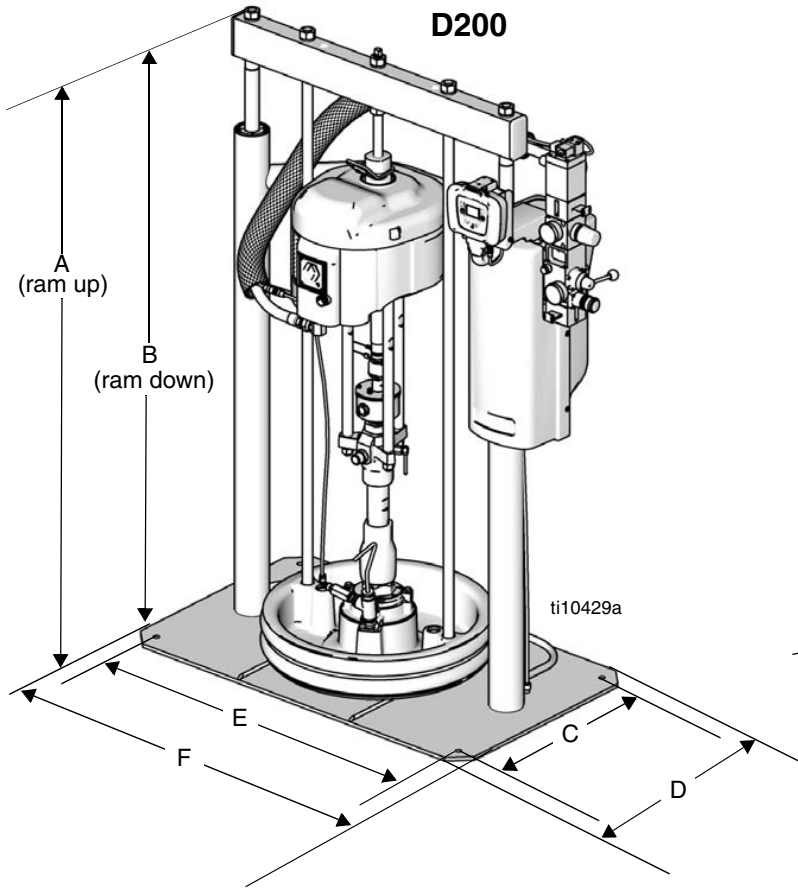


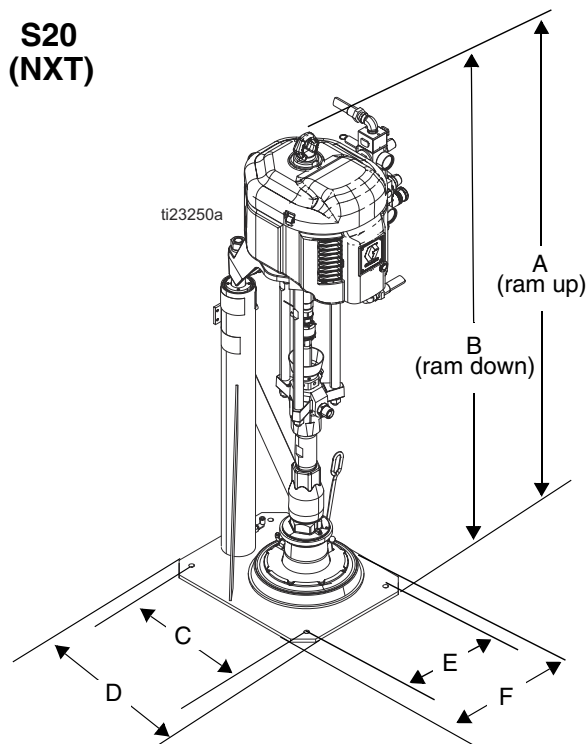
Table 4: Diagnostic Codes

Symbol	Code No.	Code Name	Diagnosis	Cause	LED Flash Code*	Accessory Light Tower Code
		Runaway	Pump running faster than set runaway limit.	<ul style="list-style-type: none"> <li>Increased air pressure.</li> <li>Increased fluid output.</li> <li>Exhausted fluid supply.</li> </ul>	2	Red Solid
	E1	Diving Up	Leak during upstroke.	Worn piston valve or packings.	7	Yellow Solid
	E2	Diving Down	Leak during downstroke.	Worn intake valve or priming rod seal.	6	Yellow Solid
	E4	Disconnected Solenoid	Solenoid is disconnected.	<ul style="list-style-type: none"> <li>Solenoid unplugged.</li> <li>Damaged solenoid wires.</li> </ul>	3	Red Solid
	E7	Drum Empty	Drum empty sensor has tripped.	Replace empty drum with full drum to clear.	4	Red Solid
	E7	Drum Low	Drum low sensor has tripped.	Replace empty drum with full drum to clear.	4	Red Flashing
	E5	Reed Switch	The air motor has seen multiple up strokes without a down stroke, or vice versa.	Damaged or disconnected reed switches.	8	Yellow Solid
		Maintenance Counter Expired	Maintenance Counter has counted down to 0 from setpoint.	Number of cycles/gallons/liters specified by setpoint have passed since last reset.	5	Yellow Flashing

\*LED (B, page 24) will flash a code, pause, then repeat.

# Dimensions





## Dimensions

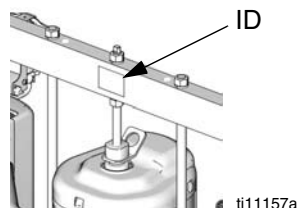
Ram Model	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)
L20c	69 (1752.6)	44 (1117.6)		21 (533.4)		22 (558.8)
<b>S20 (NXT)</b>	84 (2133.6)	59 (1498.6)	16 (406.4)	19 (482.6)	11 (279.4)	17 (431.8)
<b>S20</b>	59.3 (1506)	35.8 (909)	16 (406.4)	19 (482.6)	11 (279.4)	17 (431.8)
<b>S20c</b>	90 (2286)	65 (1651)		26.0 (661)		22.1 (562)
<b>D60</b>	89 (2260.6)	59 (1498.6)	14 (355.6)	18 (457.2)	24 (609.6)	28 (711.2)
<b>D200</b>	102.3 (2599)	64.8 (1646)	21.0 (533)	25.0 (635)	38.0 (965)	42.0 (1067)
<b>D200s</b>	109 (2769)	68.2 (1732)	23.0 (584)	25.0 (635)	45.0 (1143)	48.0 (1219)

## Weight

Use the table below to identify the maximum weight for each available platen size.

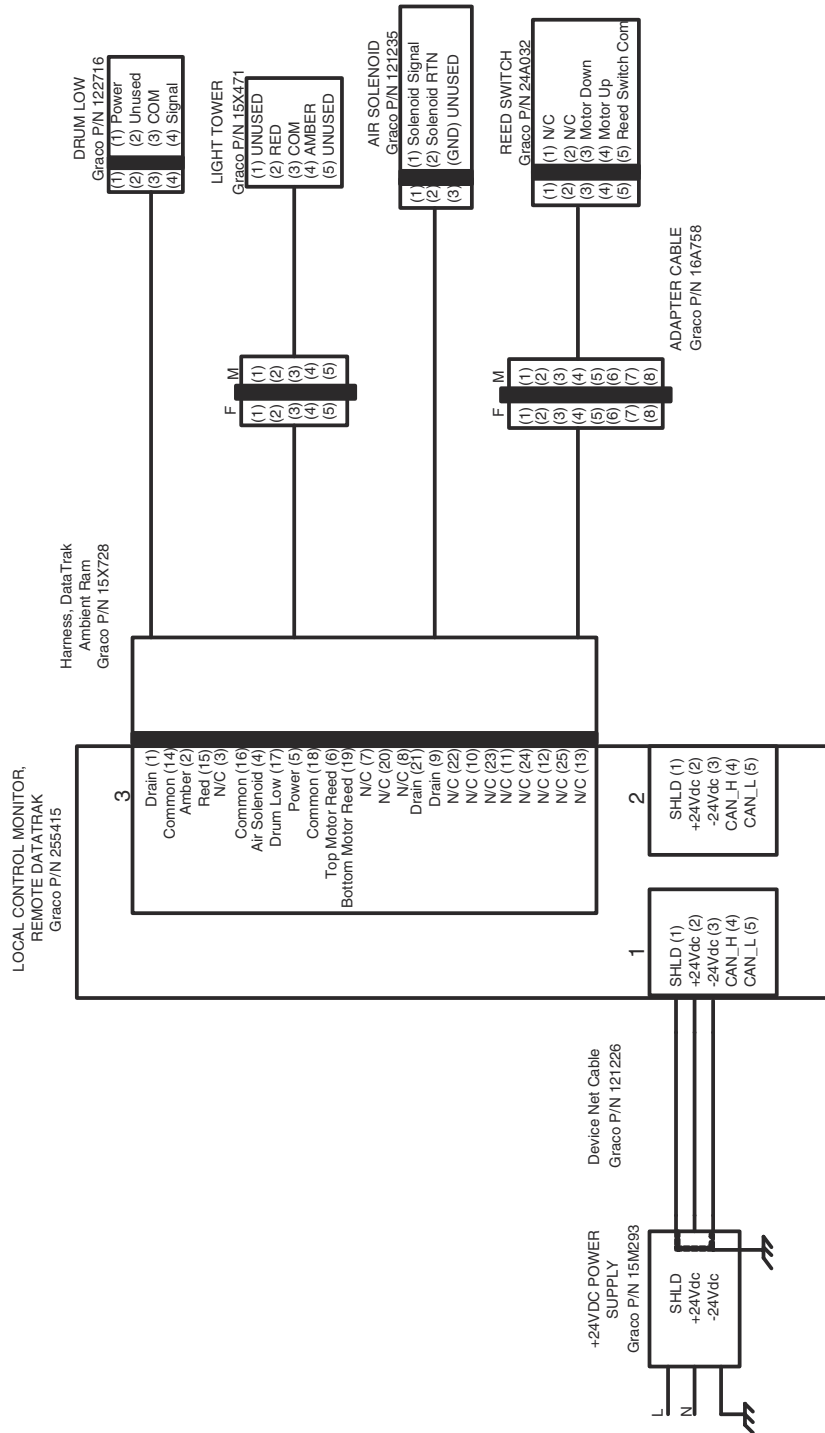
Platen Size Gallons (Liters)	Maximum Weight lbs (kg)
<b>55 (200)</b>	51 (23)
<b>30 (115)</b>	44 (20)
<b>16 (60)</b>	25 (11.3)
<b>8 (30)</b>	21 (9.5)
<b>5 (20)</b>	19 (8.7)

See the identification plate (ID) for the weight of your supply system.



# Schematic

## Remote DataTrak, Light Tower, Drum Low/Empty Sensor



## D200S, D200, S20, and D60 Supply Systems Point of Operation Instructions



For use with non-heated bulk supply of medium to high viscosity sealants and adhesive materials.  
Not for use in hazardous locations.

**Safety Practices:** The instruction on this sheet are abbreviated and are provided only as a customer service. They are not meant to replace the Operation Manual. If you are unsure of the equipment's safe and proper operation, request Graco Operation Manual 313526. It is important that you read and understand all instructions and hazards before operating this equipment.



### WARNINGS



#### SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.



#### MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.



#### SPLATTER HAZARD

During blowoff of platen splatter may occur.

- Use minimum drum removal air pressure.



#### PERSONAL PROTECTIVE EQUIPMENT


You must wear appropriate protective equipment when operating, servicing, or in the operating area of the equipment to help protect you from serious injury. This equipment includes but is not limited to:

- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer
- Gloves
- Hearing protection

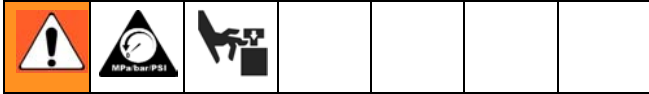
## Start and Adjust Ram



Moving parts can pinch or amputate fingers. When the pump is operating and when raising or lowering the ram, keep fingers and hands away from the pump intake, platen, and lip of the drum.

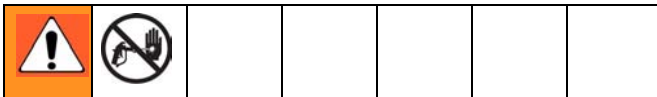
1. Close all air regulators and air valves.
2. Open main air slider valve and set ram air regulator to 40 psi (0.28 MPa, 2.8 bar). Set director valve handle to UP and let the ram rise to its full height. **2-Button Interlock:** If the system has this feature, ram will stop as it nears the top. Press and hold both buttons to raise ram completely.
3. Lubricate the platen seals with grease or other lubricant compatible with the fluid you will pump.
4. Remove the drum cover and smooth the surface of the fluid with a straightedge.
5. Put a full drum of fluid on the ram base, slide it back against the drum stops, and center it under the platen.
  -  To avoid damage to the platen seals, do not use a drum that is dented or damaged.
6. Remove bleed stick from platen bleed port.
7. Set the director valve to DOWN and lower the ram until fluid appears at the top of the platen bleed port. Adjust ram air regulator as needed. Set the director valve to neutral and close the platen bleed port. **2-Button Interlock:** If system has this feature, press and hold both buttons to start lowering the ram.

## Start and Adjust Pump




Keep hands and fingers away from the priming piston during operation and whenever the pump is charged with air. Follow **Pressure Relief Procedure** before checking, clearing, or cleaning the priming piston.

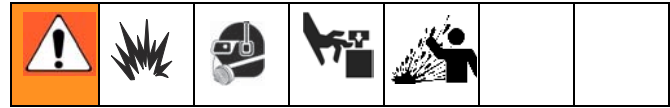
1. Supply fluid to the pump, per the requirements of your system.
2. Close the air motor slider valve. Set the ram air regulator to about 50 psi (0.35 MPA, 3.5 bar). Set the director valve to DOWN.
3. Reduce the air motor regulator pressure and open the air motor slider valve.
4. Adjust air motor regulator until the pump starts.
5. Cycle the pump slowly until all air is pushed out and the pump and hoses are fully primed.
6. Release the gun/valve trigger and lock the trigger safety. The pump should stall against pressure.



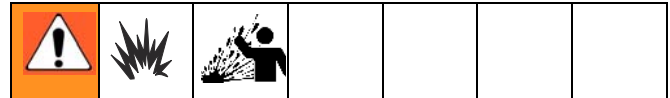
To reduce the risk of fluid injection, do not use your hand or fingers to cover the bleed hole on the underside of the bleed valve body when priming the pump. Use the handle or a crescent wrench to open and close the bleed plug.

7. If the pump fails to prime properly, open the pump bleed valve slightly. Use the bleed hole, on the underside of the valve, as a priming valve until the fluid appears at the hole. Close the plug.
  -  Always use lowest possible fluid pressure to bleed air out of pump.
8. With the pump and lines primed, and with adequate air pressure and volume supplied, the pump will start and stop as you open and close the gun/valve. In a circulating system, the pump will speed up or slow down on demand, until the air supply is shut off.
9. Use the air motor regulator to control the pump speed and the fluid pressure. Always use the lowest air pressure necessary to get the desired results. Higher pressures cause premature tip/nozzle and pump wear.

## Change Drums



1. Close the air motor slider valve to stop the pump.
2. Set ram director valve to UP to raise the platen and immediately press and hold the blowoff air button until the platen is completely out of drum. Use minimum amount of air pressure necessary to push the platen out of the drum.









Excessive air pressure in the material drum could cause the drum to rupture, causing serious injury. The platen must be free to move out of the drum. Never use drum blowoff air with a damaged drum.

3. Release the blowoff air button and allow the ram to rise to its full height. **2-Button Interlock:** If system has this feature, the ram will stop as it nears the top. Press and hold both buttons to raise ram completely.
4. Remove empty drum.
5. Inspect platen and, if necessary, remove any remaining material or material build-up.
6. Go to Step 4 of Start and Adjust Ram.

## Remote DataTrak Operation

### Key Functions When in Run Mode

1. To enter Prime Mode, press and release .
  - a. When a new drum is installed, press and hold  while in Prime Mode to reset the drum volume remaining to the drum fill volume.
  - b. To exit Prime Mode, press . The Prime symbol will disappear and the LED will stop flashing; the screen will return to Run Mode.
2. To reset the job total counter, press and hold  from Run Mode for 3 seconds.
3. To enter Setup Mode, press and hold  for 3 seconds.
4. To enter Diagnostic Mode, press and release . The system will enter Diagnostic Mode only if there are active warnings/alarms.

## L20c Supply Systems Point of Operation Instructions



For use with non-heated bulk supply of medium to high viscosity sealants and adhesive materials.  
Not for use in hazardous locations.

**Safety Practices:** The instruction on this sheet are abbreviated and are provided only as a customer service. They are not meant to replace the Operation Manual. If you are unsure of the equipment's safe and proper operation, request Graco Operation Manual 313526. It is important that you read and understand all instructions and hazards before operating this equipment.



### WARNINGS



#### SKIN INJECTION HAZARD

High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. **Get immediate surgical treatment.**

- Do not point gun at anyone or at any part of the body.
- Do not put your hand over the spray tip.
- Do not stop or deflect leaks with your hand, body, glove, or rag.
- Do not spray without tip guard and trigger guard installed.
- Engage trigger lock when not spraying.
- Follow **Pressure Relief Procedure** in this manual, when you stop spraying and before cleaning, checking, or servicing equipment.



#### MOVING PARTS HAZARD

Moving parts can pinch or amputate fingers and other body parts.

- Keep clear of moving parts.
- Do not operate equipment with protective guards or covers removed.



#### SPLATTER HAZARD

During blowoff of platen splatter may occur.

- Use minimum drum removal air pressure.



#### PERSONAL PROTECTIVE EQUIPMENT

You must wear appropriate protective equipment when operating, servicing, or in the operating area of the equipment to help protect you from serious injury. This equipment includes but is not limited to:


- Protective eyewear
- Clothing and respirator as recommended by the fluid and solvent manufacturer

- Gloves
- Hearing protection

### Start and Adjust Ram



Moving parts can pinch or amputate fingers. When the pump is operating and when raising or lowering the ram, keep fingers and hands away from the pump intake, platen, and lip of the drum.

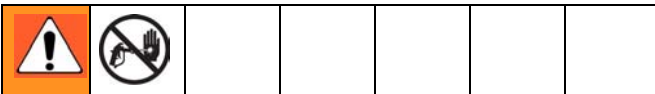
1. Close all air regulators and air valves.
2. Set elevator director valve to UP and let the ram rise to its full height.
3. Lubricate the platen seals with grease or other lubricant compatible with the fluid you will pump.
4. Remove the drum cover and smooth the surface of the fluid with a straightedge.
5. Put a full drum of fluid on the ram base, slide it back against the drum stops, and center it under the platen.
  -  To avoid damage to the platen seals, do not use a drum that is dented or damaged.
6. Remove bleed stick from platen bleed port.
7. Turn elevator director valve to DOWN and continue to lower the ram until fluid appears at the platen bleed port. Close the platen bleed port.

## Start and Adjust Pump




Keep hands and fingers away from the priming piston during operation and whenever the pump is charged with air. Follow **Pressure Relief Procedure** before checking, clearing, or cleaning the priming piston.

1. Supply fluid to the pump, per the requirements of your system.
2. Close the air motor valve. Set the director valve to DOWN.
3. Reduce the air motor regulator pressure and open the air motor shutoff valve.
4. Adjust air motor regulator until the pump starts.
5. Cycle the pump slowly until all air is pushed out and the pump and hoses are fully primed.
6. Release the gun/valve trigger and lock the trigger safety. The pump should stall against pressure.



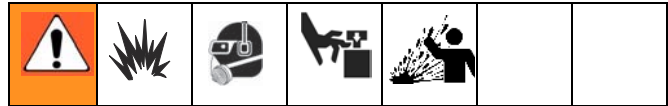
To reduce the risk of fluid injection, do not use your hand or fingers to cover the bleed hole on the underside of the bleed valve body when priming the pump. Use the handle or a crescent wrench to open and close the bleed plug.

7. If the pump fails to prime properly, open the pump bleed valve slightly. Use the bleed hole, on the underside of the valve, as a priming valve until the fluid appears at the hole. Close the plug.

 Always use lowest possible fluid pressure to bleed air out of pump.

8. With the pump and lines primed, and with adequate air pressure and volume supplied, the pump will start and stop as you open and close the gun/valve. In a circulating system, the pump will speed up or slow down on demand, until the air supply is shut off.
9. Use the air motor regulator to control the pump speed and the fluid pressure. Always use the lowest air pressure necessary to get the desired results. Higher pressures cause premature tip/nozzle and pump wear.

## Change Drums



1. Turn the air motor valve off to stop the pump.
2. Set elevator director valve to UP to raise the platen and immediately press and hold the blowoff air button until the platen is completely out of drum. Use minimum amount of air pressure necessary to push the platen out of the drum.



Excessive air pressure in the material drum could cause the drum to rupture, causing serious injury. The platen must be free to move out of the drum. Never use drum blowoff air with a damaged drum.

3. Release the blowoff air button and allow the ram to rise to its full height.
4. Remove empty drum.
5. Inspect platen and, if necessary, remove any remaining material or material build-up.
6. Go to Step 4 of Start and Adjust Ram.



# Technical Data

<b>Max air input pressure (supply system) / Air inlet size</b>	
L20c - 2 in. elevator, 5 gal. (20 L) . . . . .	100 psi (0.7 MPa, 7 bar) / 1/2 npsm(f)
S20 - 3 in. single post, 5 gal. (20 L) . . . . .	125 psi (0.9 MPa, 9 bar) / 1/2 npt(f)
D60 - 3 in. dual post, 16 gal. (60 L), 5 gal. (20 L), 30 gal. (115 L) . . . . .	150 psi (1.0 MPa, 10 bar) / 3/4 npt(f)
D200 - 3 in. dual post, 55 gal. (200 L), 30 gal. (115 L), 16 gal. (60 L), 8 gal. (30 L), 5 gal. (20 L) . . . . .	150 psi (1.0 MPa, 10 bar) / 3/4 npt(f)
D200s - 6.5 in. dual post, 55 gal. (200 L), 30 gal. (115 L)	125 psi (0.9 MPa, 9 bar) / 3/4 npt(f)
<b>Max fluid, air working pressure. and weight (displacement pump) . . . . .</b>	For Check-Mate pump packages, see manual 312376. For Dura-Flo pump packages, see manuals 311826, 311828, 311833.
<b>Pump Wetted parts</b>	For Check-Mate displacement pumps, see manual 312375. For Dura-Flo displacement pumps, see manuals 311717, 311825, 311827.
<b>Platen Codes (see page 7) : Part number; Wetted parts</b>	
<b>B</b> : 257727, 5 gal. (20 L)	Electroless nickel, polyurethane, nitrile, carbon steel, polyethylene, zinc plated carbon steel, buna, 316 sst, 17-4PH sst
<b>J</b> : 257732, 8 gal. (30 L)	
<b>S</b> : 257737, 16gal. (60 L) . . . . .	
<b>C</b> : 257728, 5 gal. (20 L)	Electroless nickel, polyurethane, carbon steel, polyethylene, nitrile, zinc plated carbon steel, buna, 316 sst 17-4PH sst
<b>K</b> : 257733, 8 gal. (30 L)	
<b>T</b> : 257740, 16gal. (60 L) . . . . .	
<b>F</b> : 257729, 5 gal. (20 L)	Stainless steel, polyurethane, PTFE coated nitrile, polyethylene, nitrile, PTFE, 303 sst, 304 sst, 316 sst, 17-4PH sst
<b>L</b> : 257734, 8 gal. (30 L)	
<b>U</b> : 257738, 16gal. (60 L) . . . . .	
<b>G</b> : 257730, 5 gal. (20 L)	Electroless nickel, aramind reinforced elastomer, rubber-based PSA, nitrile, polyethylene, zinc plated carbon steel, buna, 1018 carbon steel, 304 sst, 316 sst, 17-4PH sst
<b>M</b> : 257735, 8 gal. (30 L)	
<b>W</b> : 257739, 16gal. (60 L) . . . . .	
<b>H</b> : 257731, 5 gal. (20 L)	Electroless nickel, aramind reinforced elastomer, rubber-based PSA, polyurethane, polyethylene, nitrile, zinc plated carbon steel, buna, 1018 carbon steel, 304 sst, 316 sst, 17-4PH sst
<b>R</b> : 257736, 8 gal. (30 L)	
<b>Y</b> : 257741, 16gal. (60 L) . . . . .	
<b>7</b> : 255661, 30 gal. (115 L) . . . . .	zinc plated carbon steel, EPDM, sst, fluoroelastomer PTFE, EPDM, PTFE coated aluminum, zinc plated carbon steel, 316 sst
<b>8</b> : 255662, 55 gal. (200 L) . . . . .	
<b>9</b> : 255663, 55 gal. (200 L) . . . . .	
<b>A</b> : 255664, 55 gal. (200 L) . . . . .	EPDM, aluminum, zinc plated carbon steel, 316 sst PTFE, neoprene, aluminum, zinc plated carbon steel, 316 sst
<b>Ambient operating temperature range (supply system)</b>	32-120 °F (0- 49°C)
<b>Sound data . . . . .</b>	See separate air motor manual.
<b>External power supply requirements (DatraTrak)</b>	
AC power units. . . . .	100-240 Vac, 50/60 Hz, single phase, 1.2 amps max draw
DC power units . . . . .	24 Vdc, 1.2 amps max draw

# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

**THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

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For the latest information about Graco products, visit [www.graco.com](http://www.graco.com).

**TO PLACE AN ORDER**, contact your Graco distributor or call to identify the nearest distributor.

**Phone:** 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

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Original instructions. This manual contains English. MM 313526

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